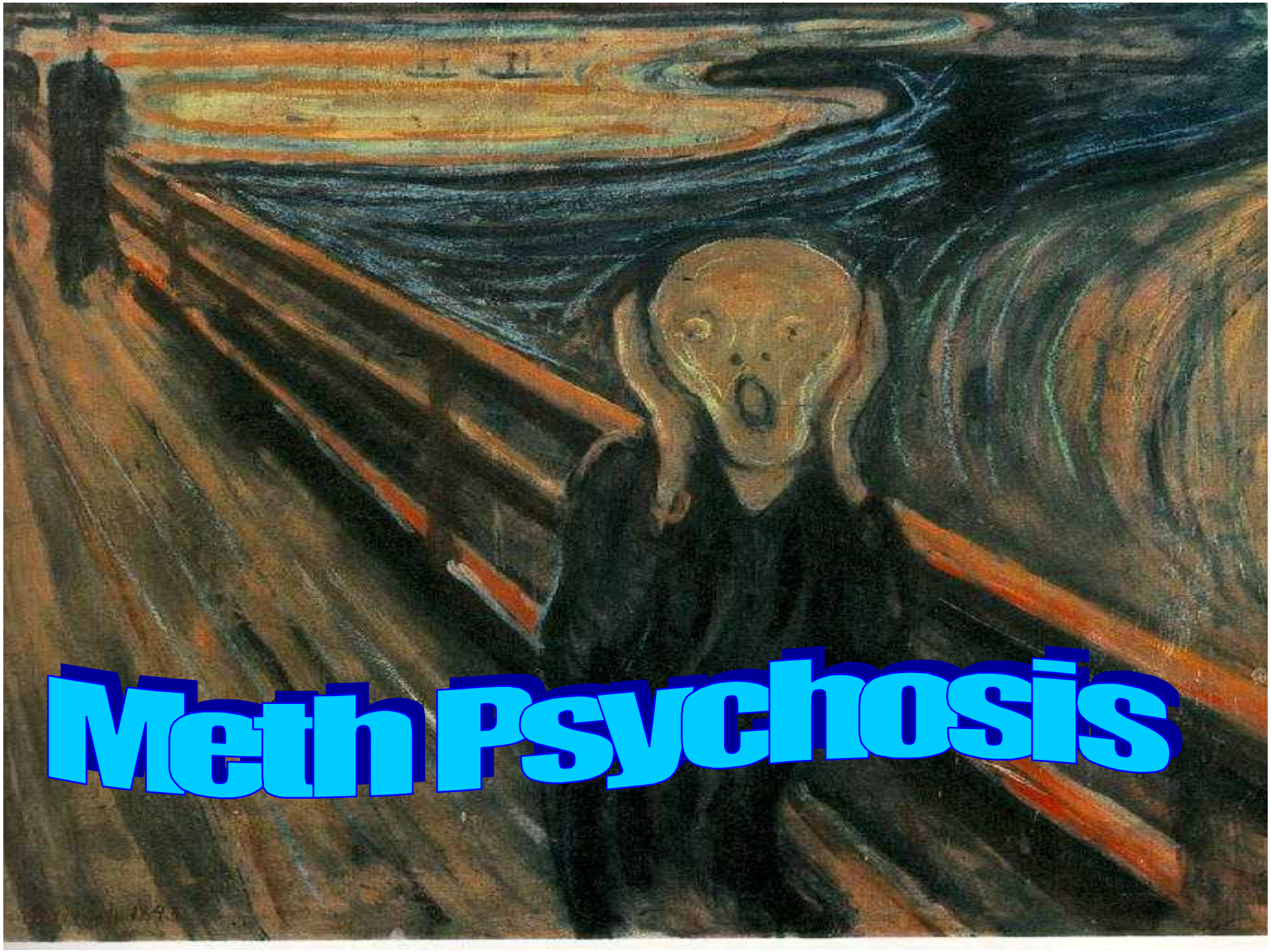
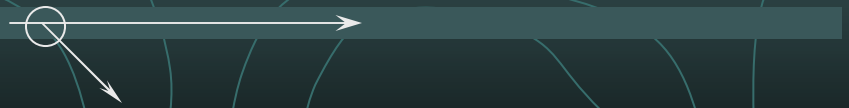

Meth Psychosis

The Human Condition

- Drug abuse does not occur in a vacuum; we are all subject to influences beyond our control:
  - Genetic Propensities (up to 1/3 of all people)
  - Basic Neurochemical Makeup
  - Psychological Dispositions
  - Social Conditions
  - Existential Vacuum (sense of meaninglessness in life)

Modular Brain



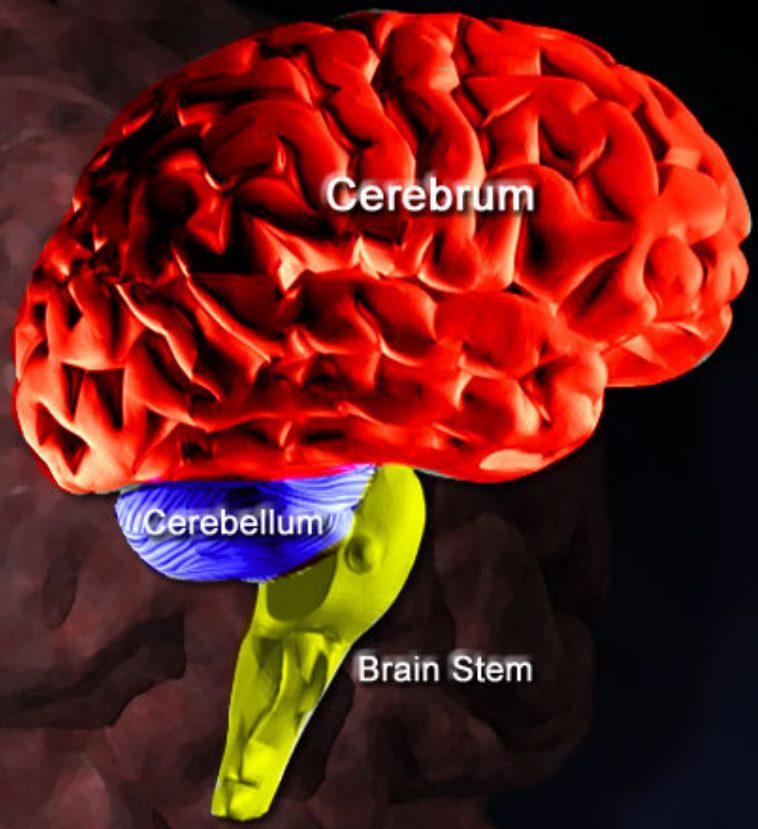
The brain consists of areas that work automatically and “integrate” for overall cognitive functioning

The Brain

Three Main Parts

- Cerebrum
- Cerebellum
- Brain Stem

NOTE: Each is further divided into regions that control specific functions



The Brain

Three Main Parts

Cerebrum

- **Largest part of the brain containing all the centers that received and interpret –**
  - **Sensory Information**
  - **Initiate movement**
  - **Analyze information**
  - **Reason and experience emotion**
- **Dominates exterior surface, which is divided into two hemispheres**
  - **Right Hemisphere (Representational Hemisphere)**
    - **Controls left side of the body**
    - **Temporal and spatial relationships**
    - **Analyzes nonverbal information**
    - **Communicating emotion**
  - **Left Hemisphere (Categorical Hemisphere)**
    - **Controls right side of the body**
    - **Produces and understands language**

The Brain

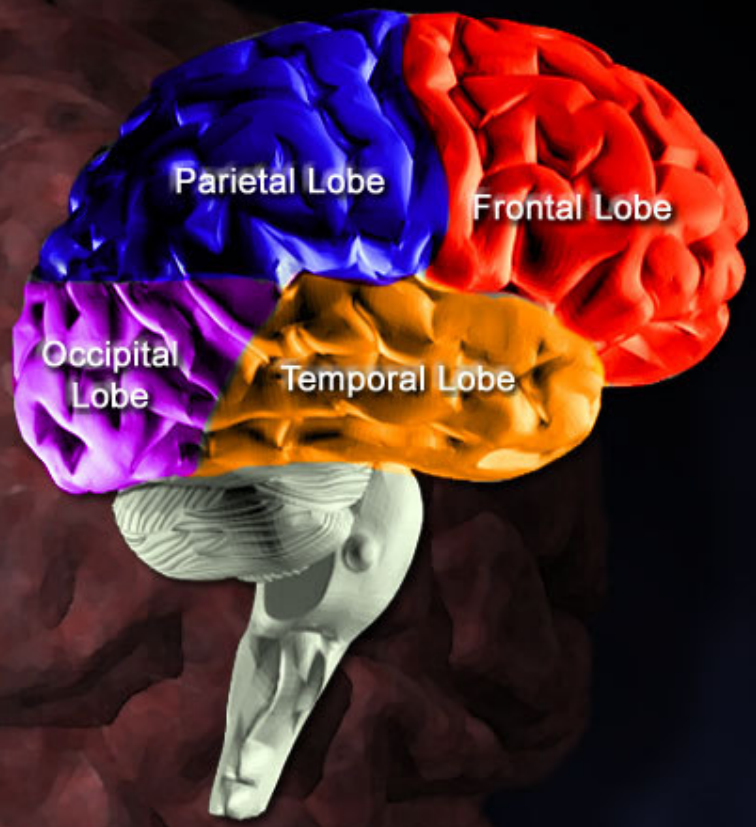
Three Main Parts

Cerebrum

- **To accommodate the skull the cortex is folded forming –**
  - **Folds (gyri)**
  - **Grooves (sulci)**

- **Several large sulci divide the cortex into lobes –**
  - **Frontal lobe**
  - **Parietal lobe**
  - **Occipital lobe**
  - **Temporal lobe**

Note: Each has a different function



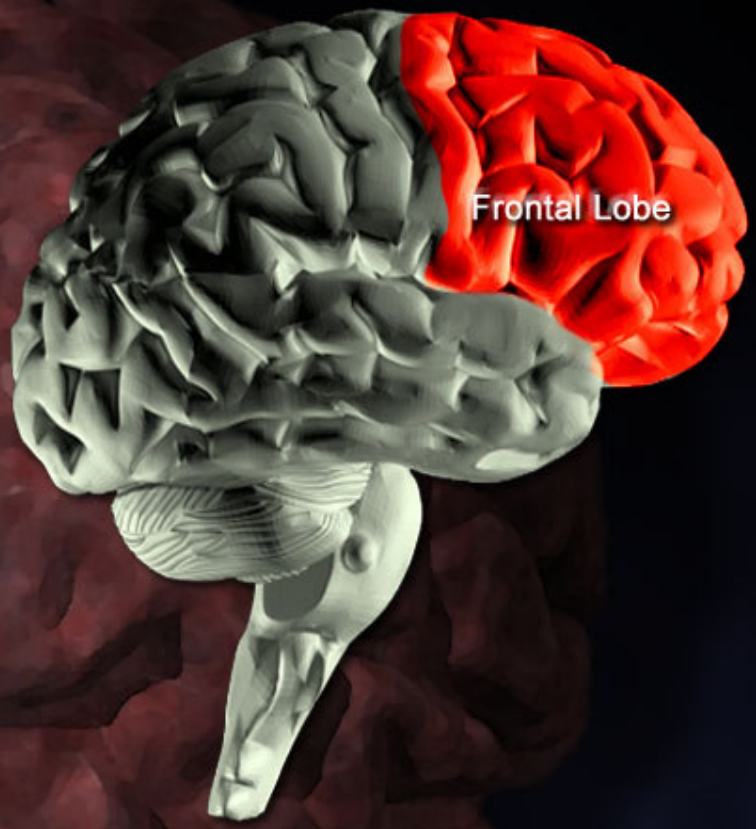
The Brain

Three Main Parts

Cerebrum – Frontal Lobe

Frontal Lobe Functions:

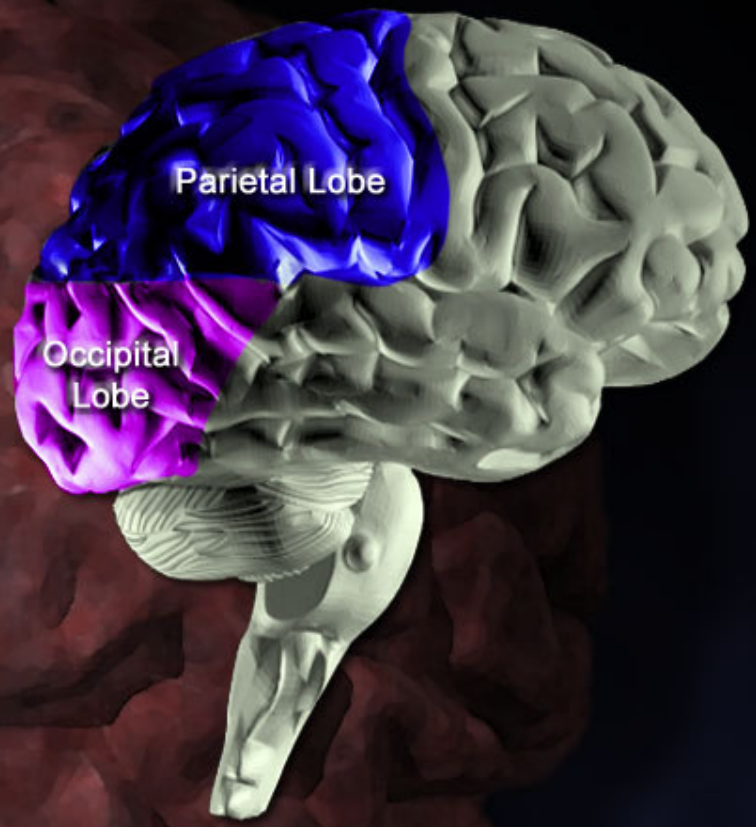
- Behavior
- Abstract thought processes
- Problem solving
- Attention
- Creative thought
- Some emotion
- Intellect
- Reflection
- Judgment
- Initiative
- Inhibition
- Coordination of movements
- Generalized and mass movements
- Some eye movements
- Sense of smell
- Muscle movements
- Skilled movements
- Some motor skills
- Physical reaction
- Libido (sexual urges)



The Brain

Three Main Parts

Cerebrum – Occipital & Parietal Lobes



Occipital Lobe Functions:

- Vision
- Reading

Parietal Lobe Functions:

- Sense of touch (tactile sensation)
- Appreciation of form through touch (stereognosis)
- Response to internal stimuli (proprioception)
- Sensory combination and comprehension
- Some language and reading functions
- Some visual functions

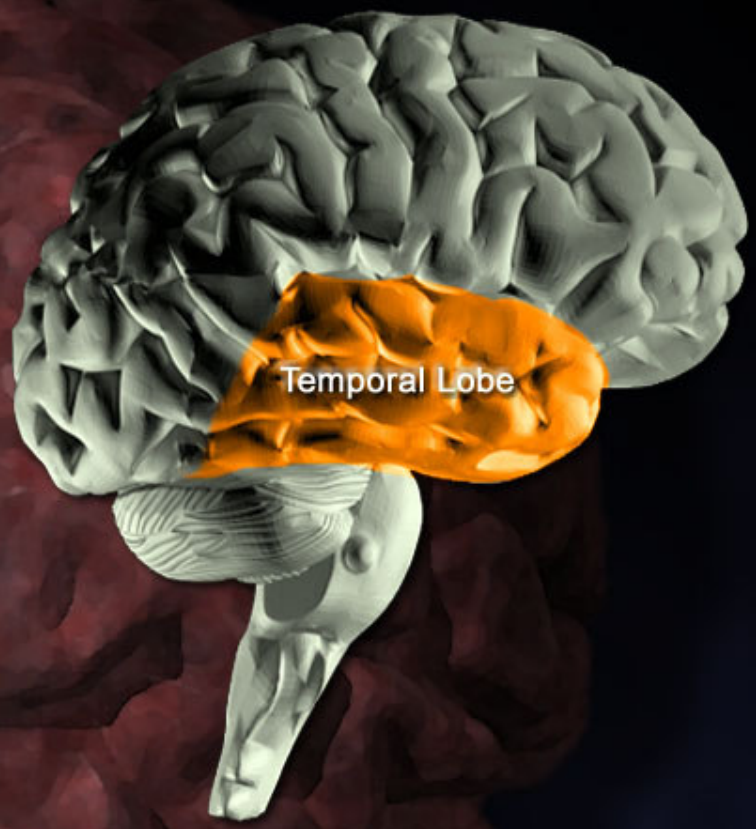
The Brain

Three Main Parts

Cerebrum – Temporal Lobe

Temporal Lobe Functions:

- Auditory memories
- Some hearing
- Visual memories
- Some vision pathways
- Other memory
- Music
- Fear
- Some language
- Some speech
- Some behavior and emotions
- Sense of identity



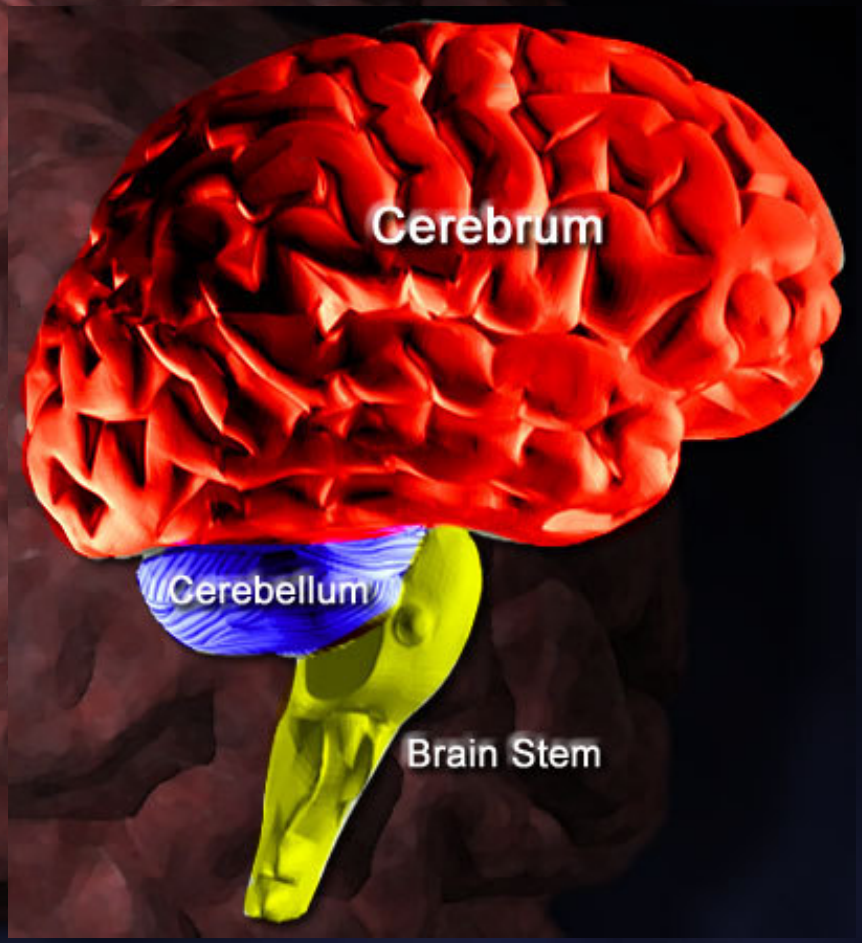
The Brain

Three Main Parts

Cerebellum

Cerebellum Functions:

- **Balance**
- **Posture**



The Brain

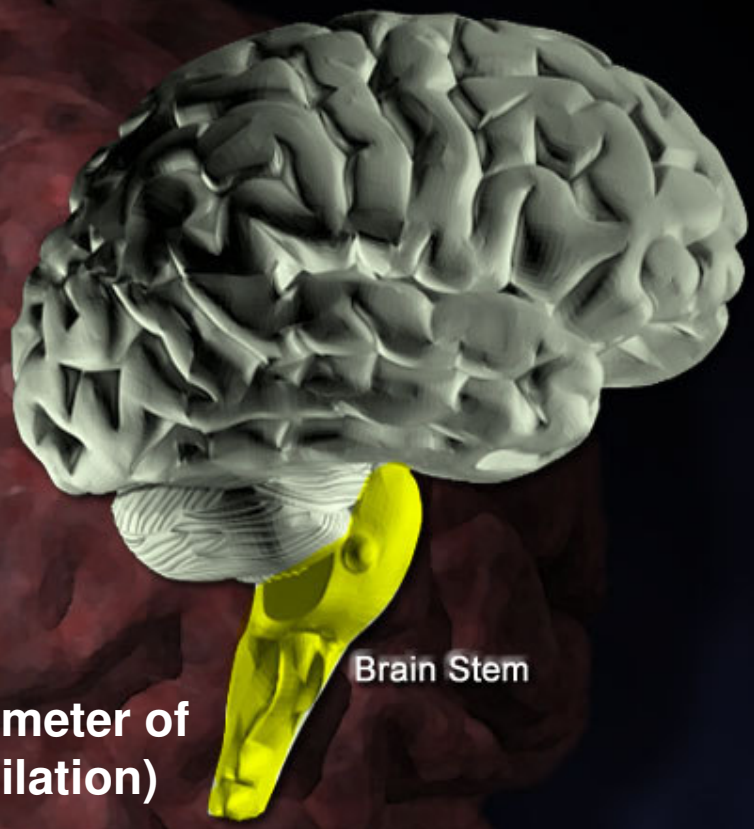
Three Main Parts

Brain Stem

Brain Stem Functions:

- **Motor and sensory pathway to body and face**

- **Vital centers:**
  - **Cardiac**
  - **Respiratory**
  - **Vasomotor (regulation of the size and diameter of blood vessels through constriction and dilation)**



The Brain

Inner Brain

Overview

- Deep within the brain, hidden from view, lie structures that are the gatekeepers between the spinal cord and the cerebral hemispheres.

- These structures not only determine our emotional state, they also modify our perceptions and responses depending on that state, and allow us to initiate movements that you make without thinking about them.

- Like the lobes in the cerebral hemispheres, the structures come in pairs: each is duplicated in the opposite half of the brain.

The Brain

Inner Brain

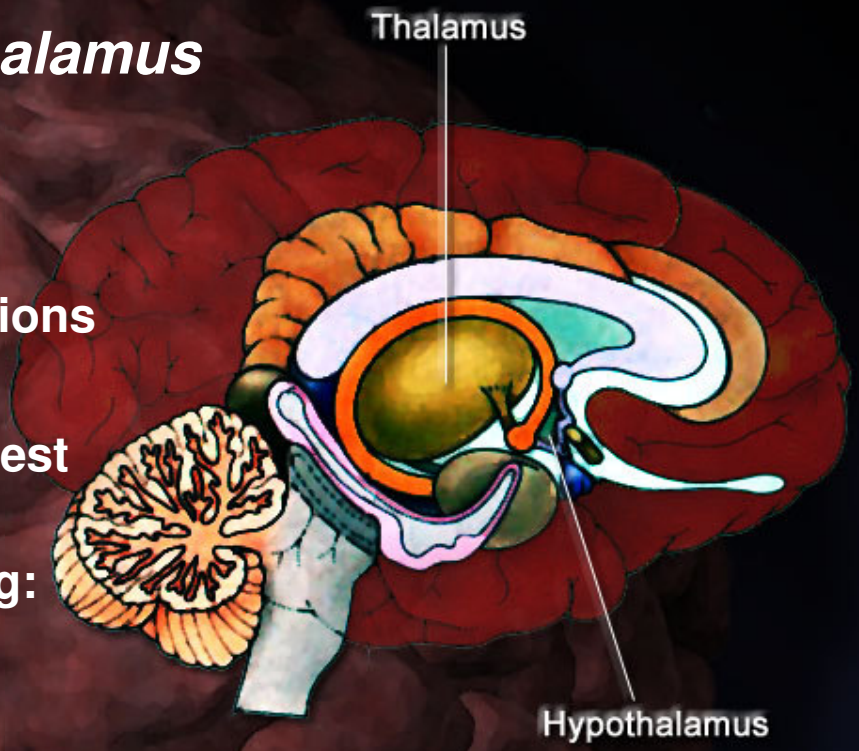
Limbic System

- Recognized as the pleasure center of the brain
- Functions
  - Sets the emotional tone of the mind
  - Filters external events through internal states (emotional coloring)
  - Tags events as internally important
  - Stores highly charged emotional memories
  - Modulates motivation
  - Controls appetite and sleep cycles
  - Promotes bonding
  - Directly processes the sense of smell
  - Modulates libido
- Problems
  - Moodiness, irritability, clinical depression
  - Increased negative thinking
  - Perceive events in a negative way
  - Decreased motivation
  - Flood of negative emotions
  - Appetite and sleep problems
  - Decreased or increased sexual responsiveness
  - Social isolation

The Brain

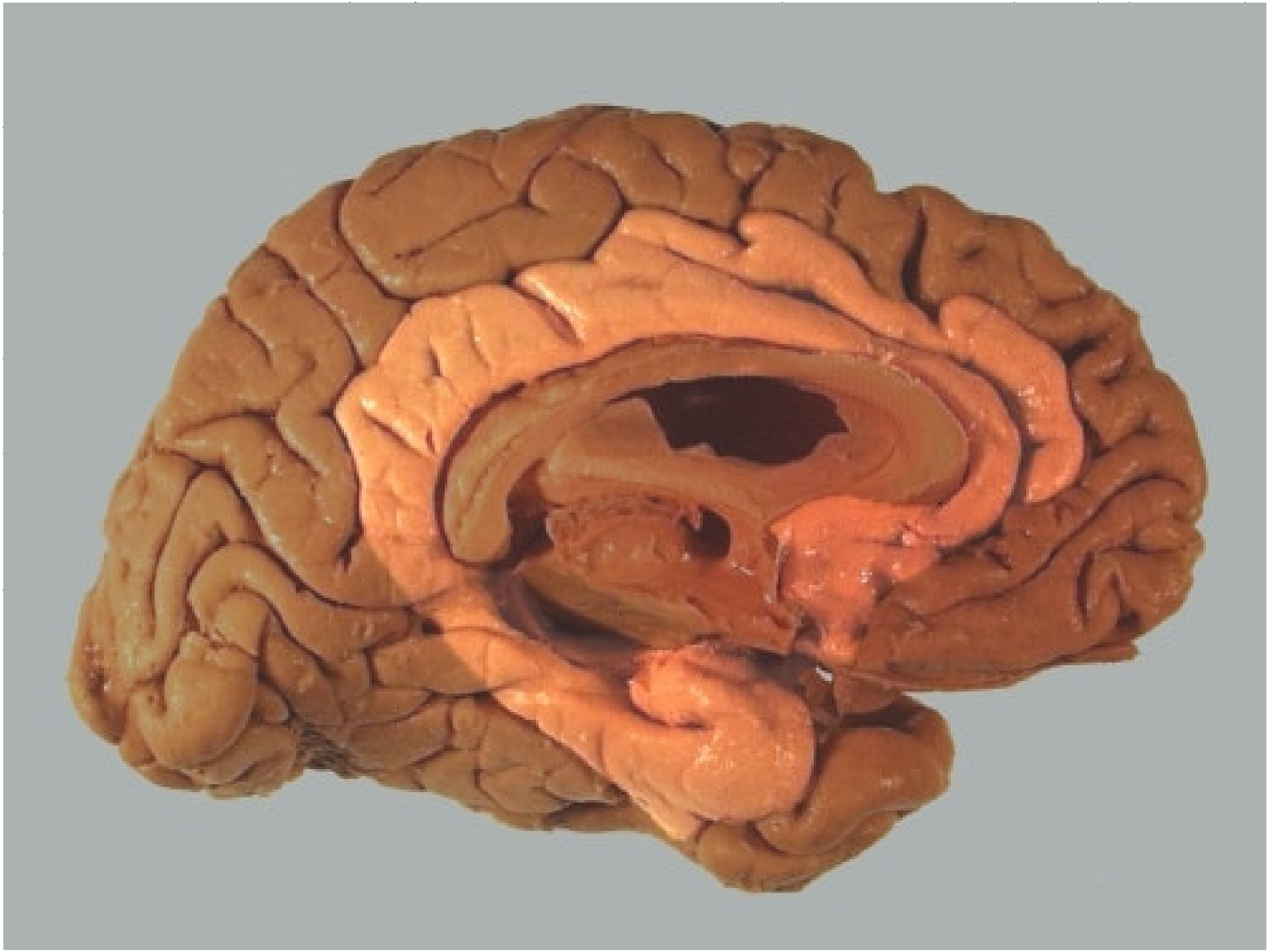
Inner Brain

Components – Hypothalamus & Thalamus

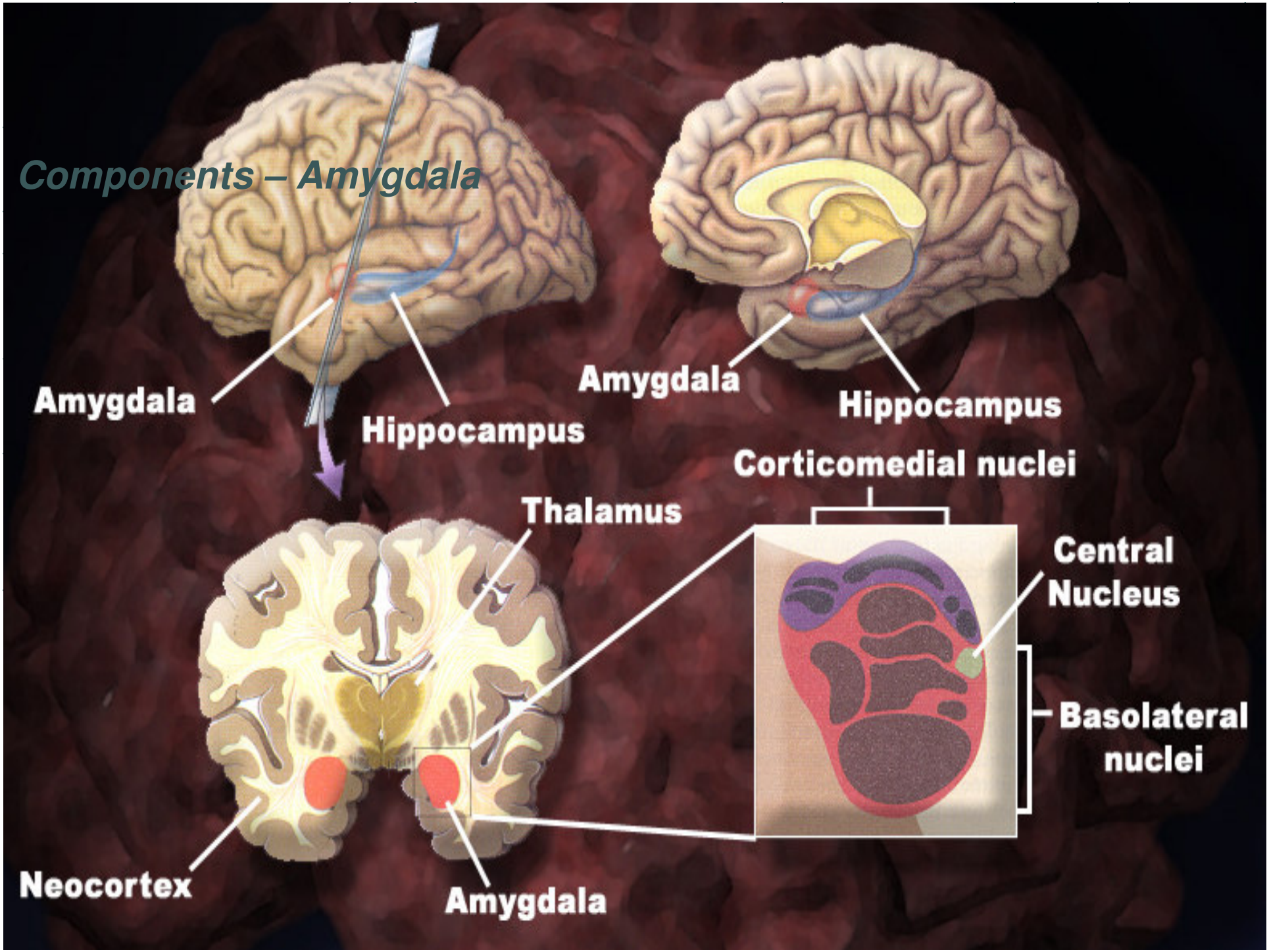


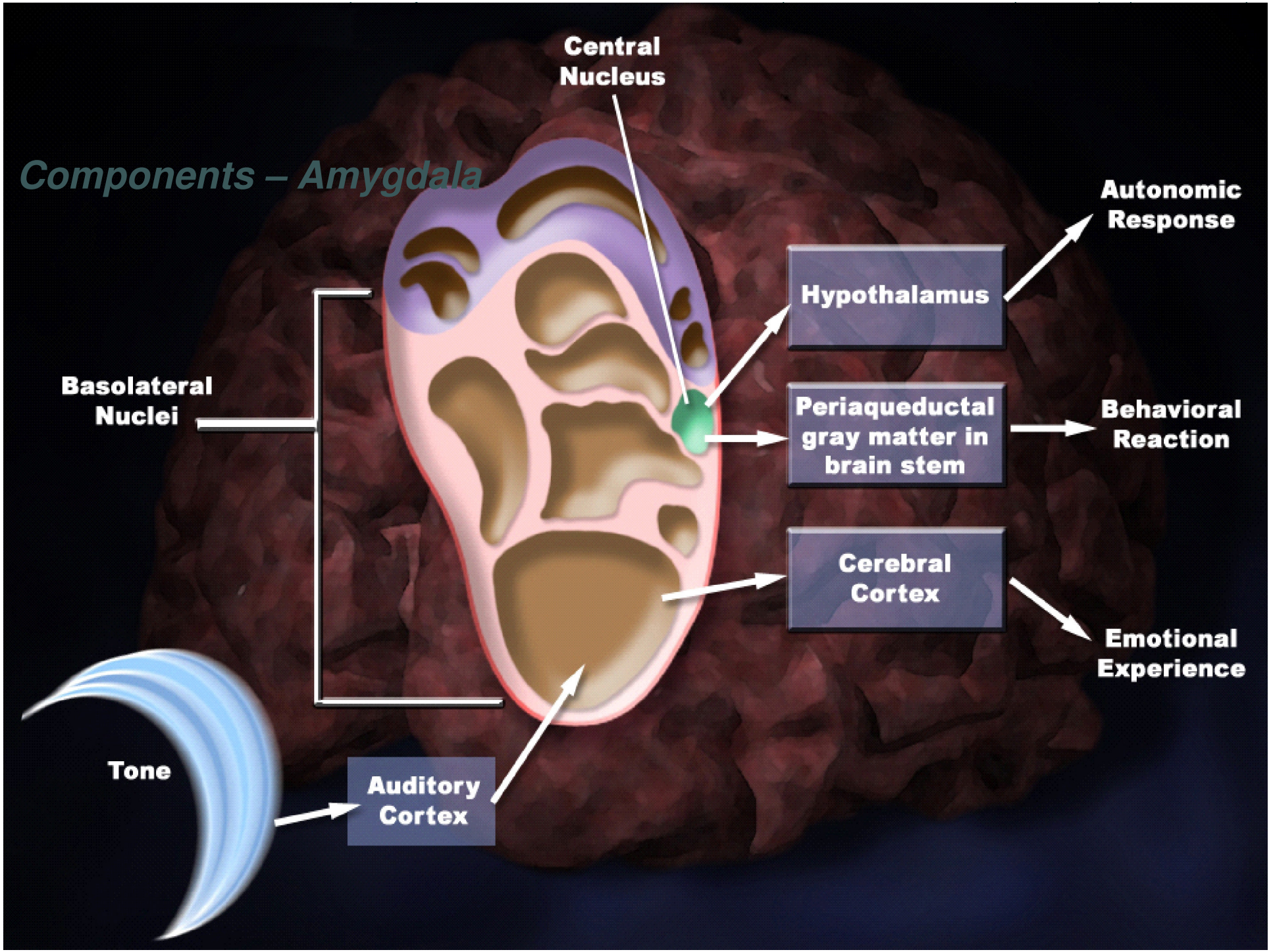
- **Hypothalamus**
  - **About the size of a pearl**
  - **Directs a multitude of important functions**
  - **Wakes you up in the morning**
  - **Gets the adrenaline flowing during a test or job interview**
  - **Important emotional center controlling:**
    - **Moods and motivation**
    - **Sexual maturation**
    - **Temperature regulation**
    - **Hormonal body processes**

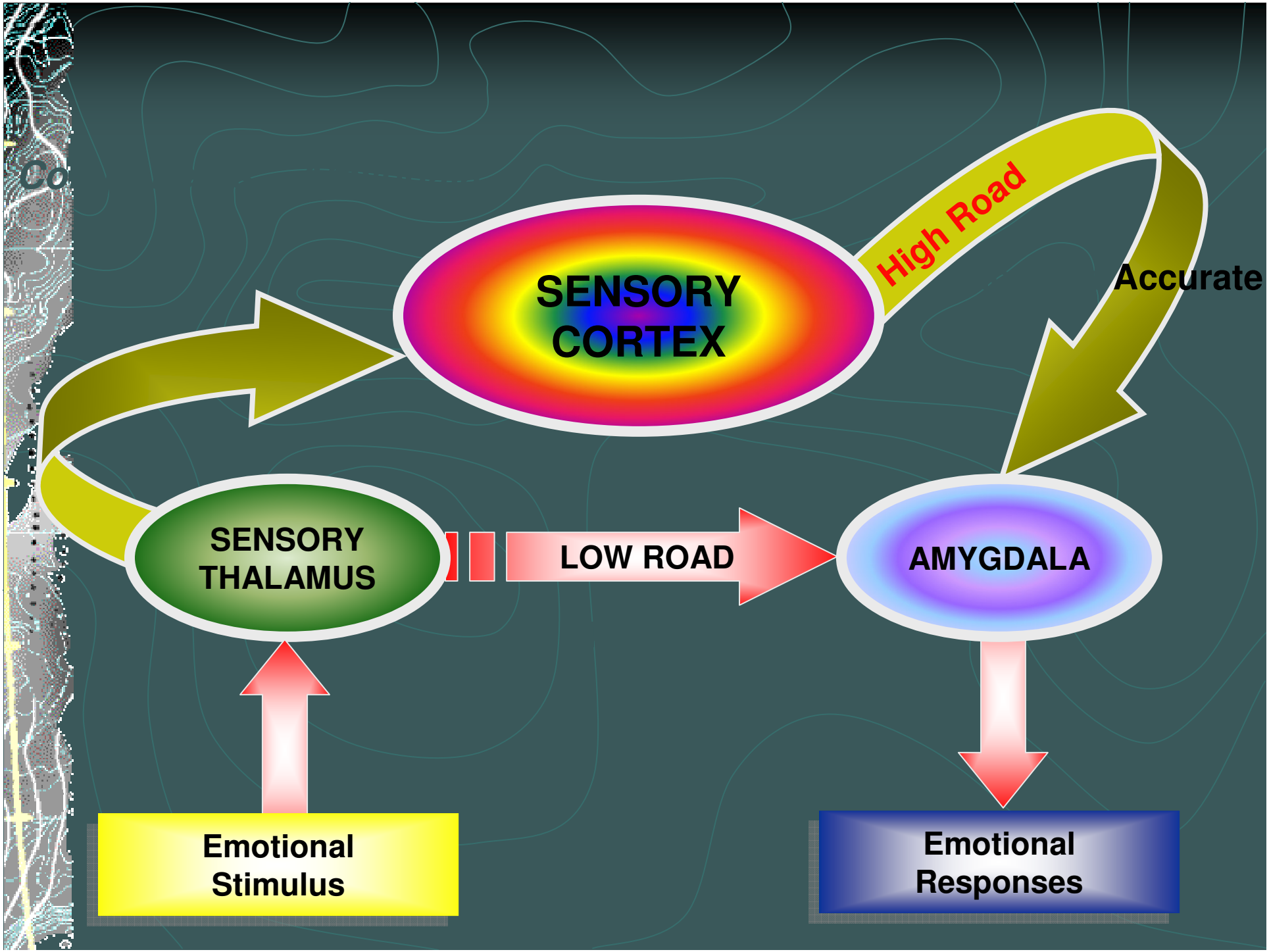
- **Thalamus**
  - **Major clearinghouse for information going to and from the spinal cord and the cerebrum.**



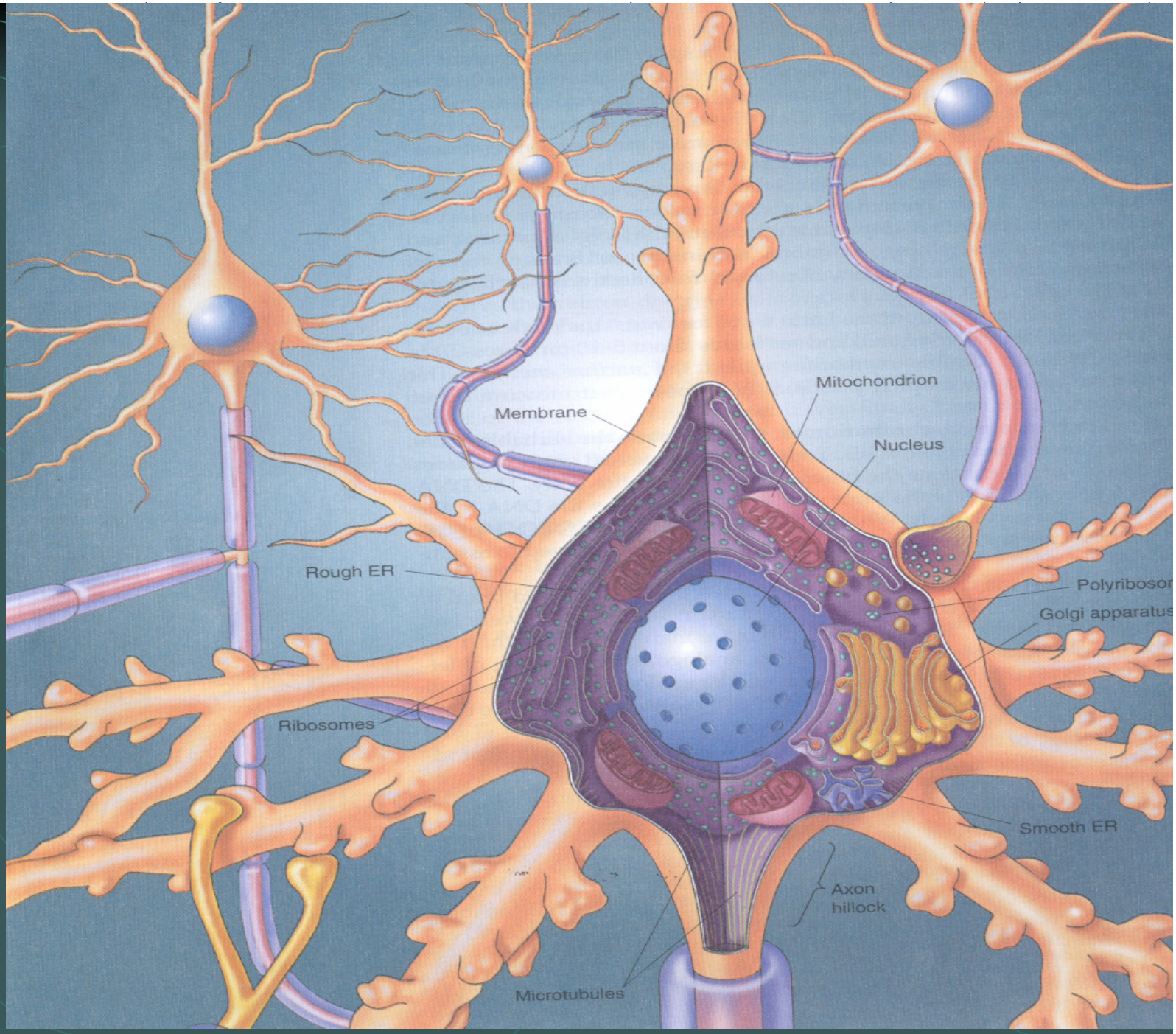
Components – Amygdala



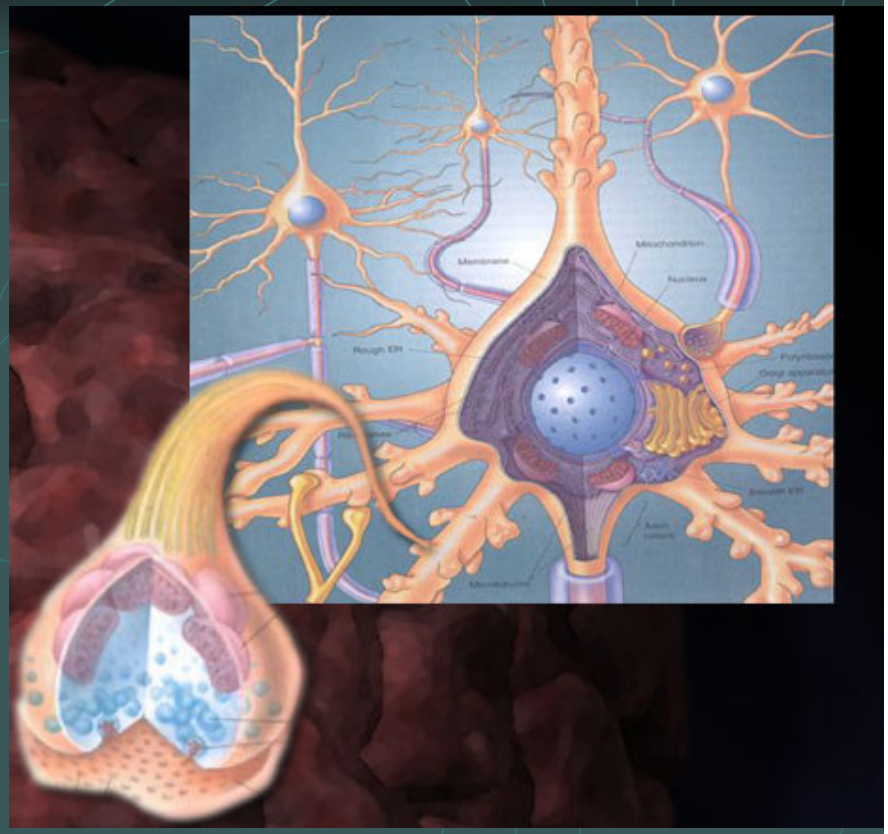

Components – Amygdala
Central Nucleus
Basolateral Nuclei
Hypothalamus
Autonomic Response
Periaqueductal gray matter in brain stem
Behavioral Reaction
Cerebral Cortex
Emotional Experience
Tone
Auditory Cortex


SENSORY CORTEX
High Road
Accurate
SENSORY THALAMUS
LOW ROAD
AMYGDALA
Emotional Stimulus
Emotional Responses

Neuron Architecture

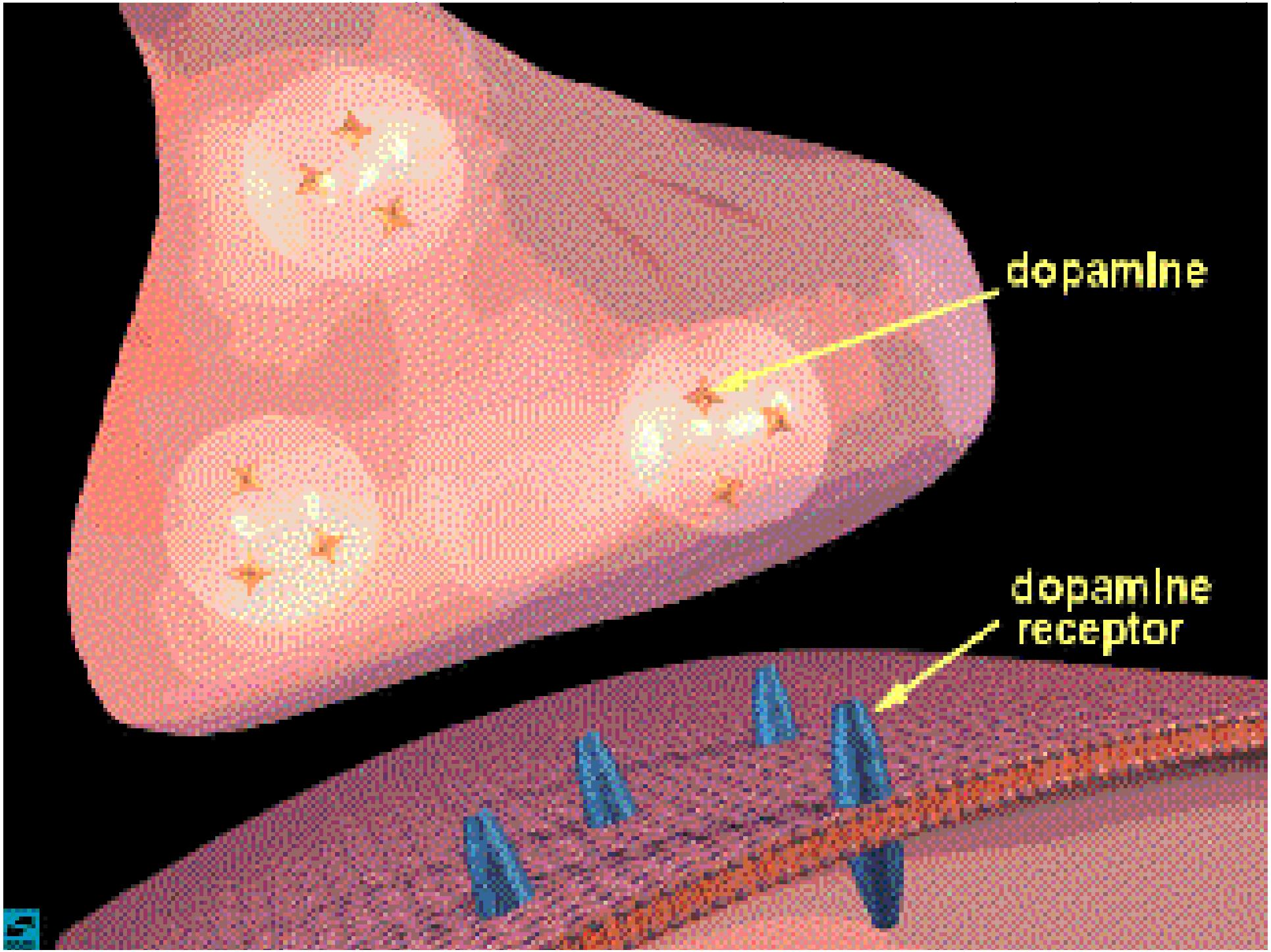


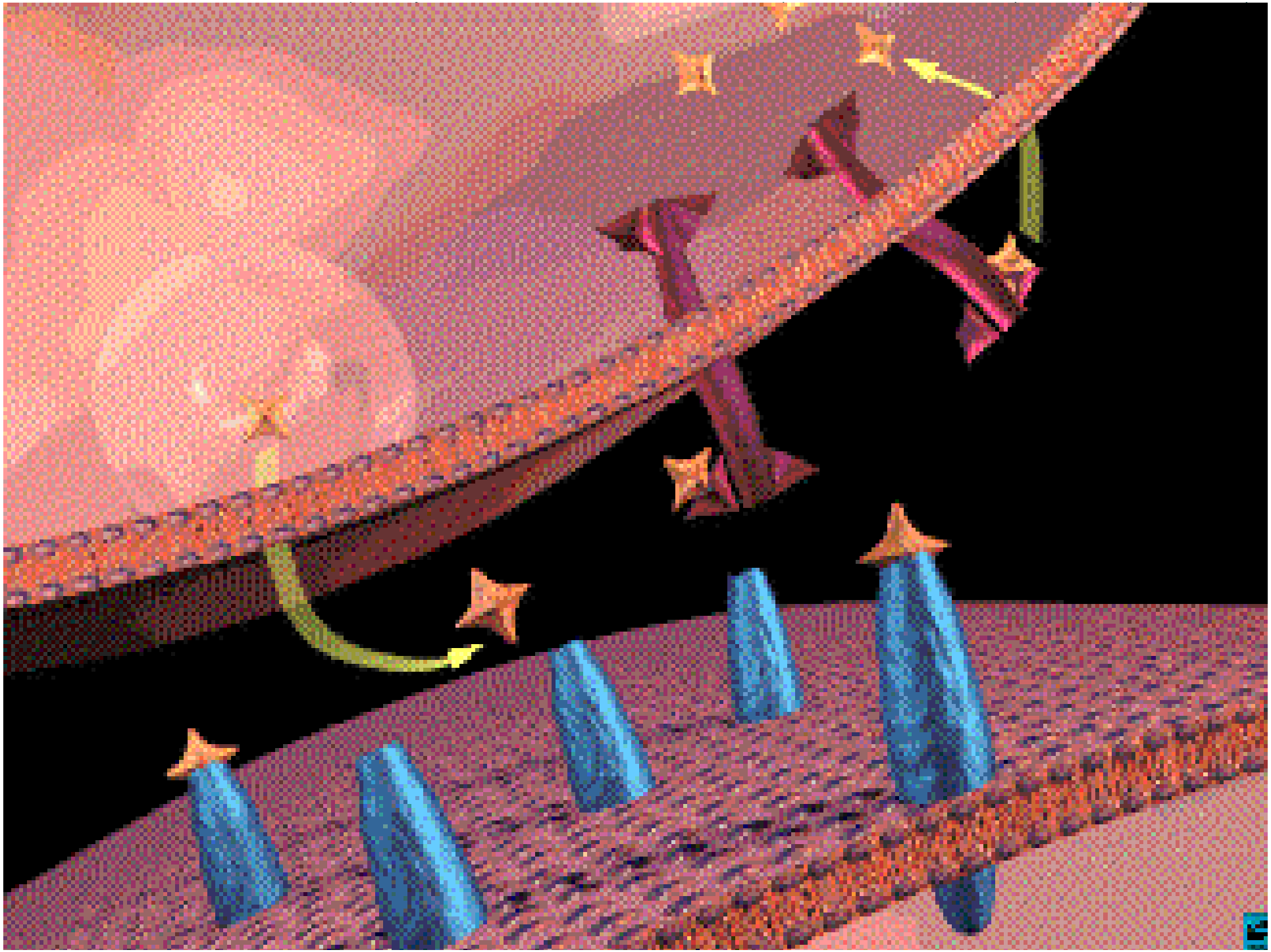
Design and Function



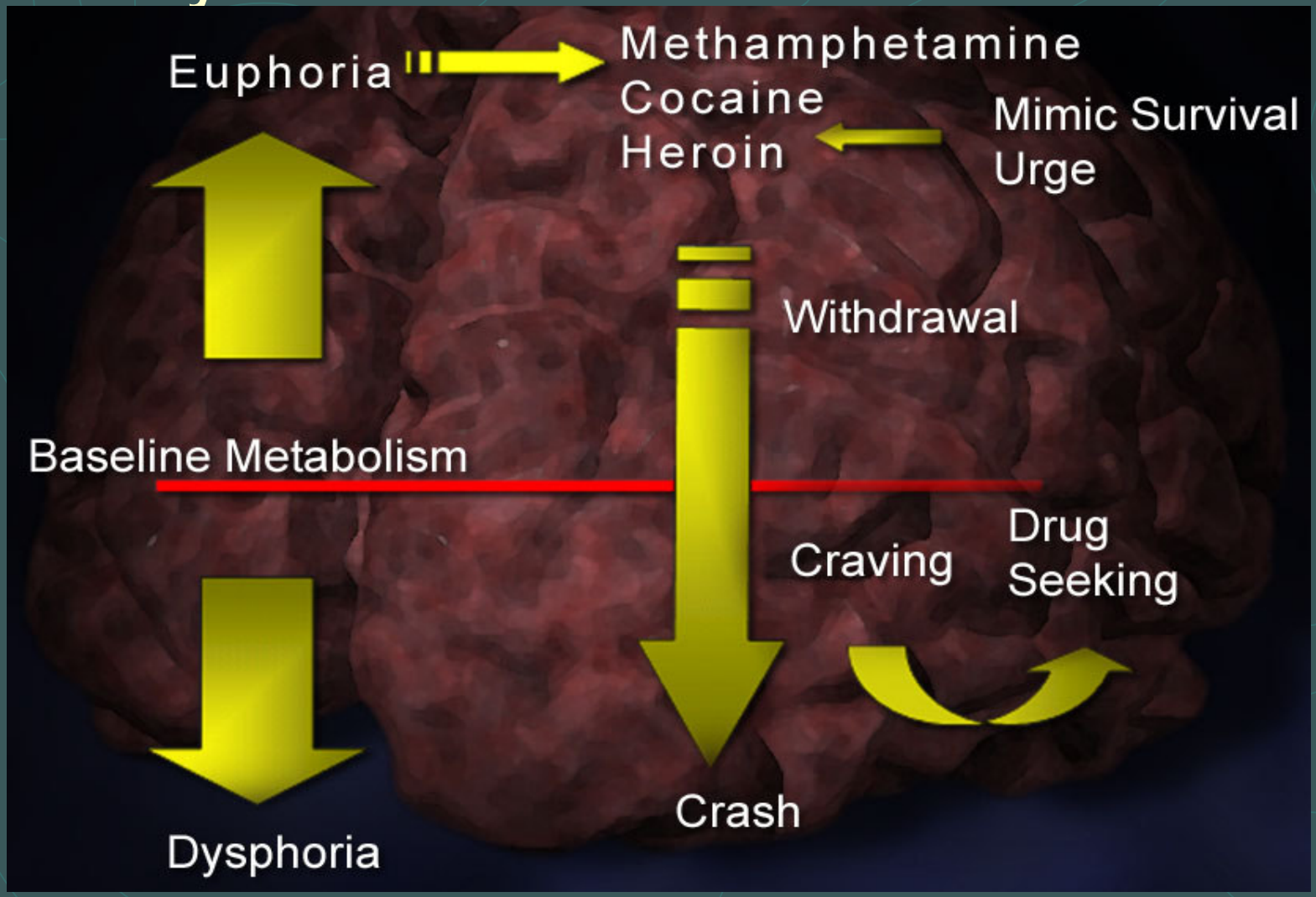
The human brain is very complex:

- It consists of over 100 Billion brain cells (neurons)
- Each neuron has (on the average) 5000 "synaptic connections"
- A synapse contains a chemical factory that sends messages across the "synaptic gap" to other neurons by releasing varying types and quantities of molecules (neurotransmitters)


dopamine
dopamine
receptor

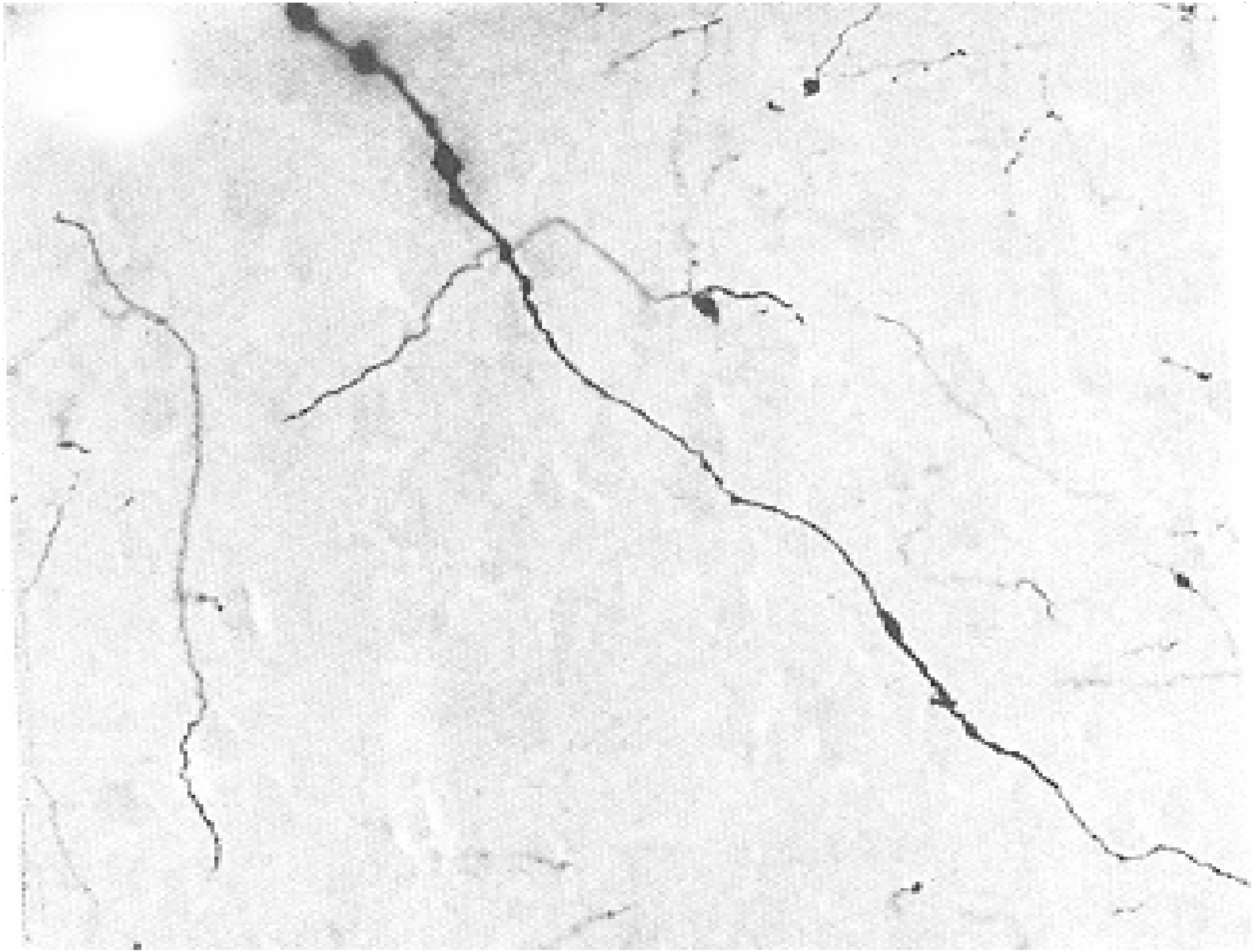


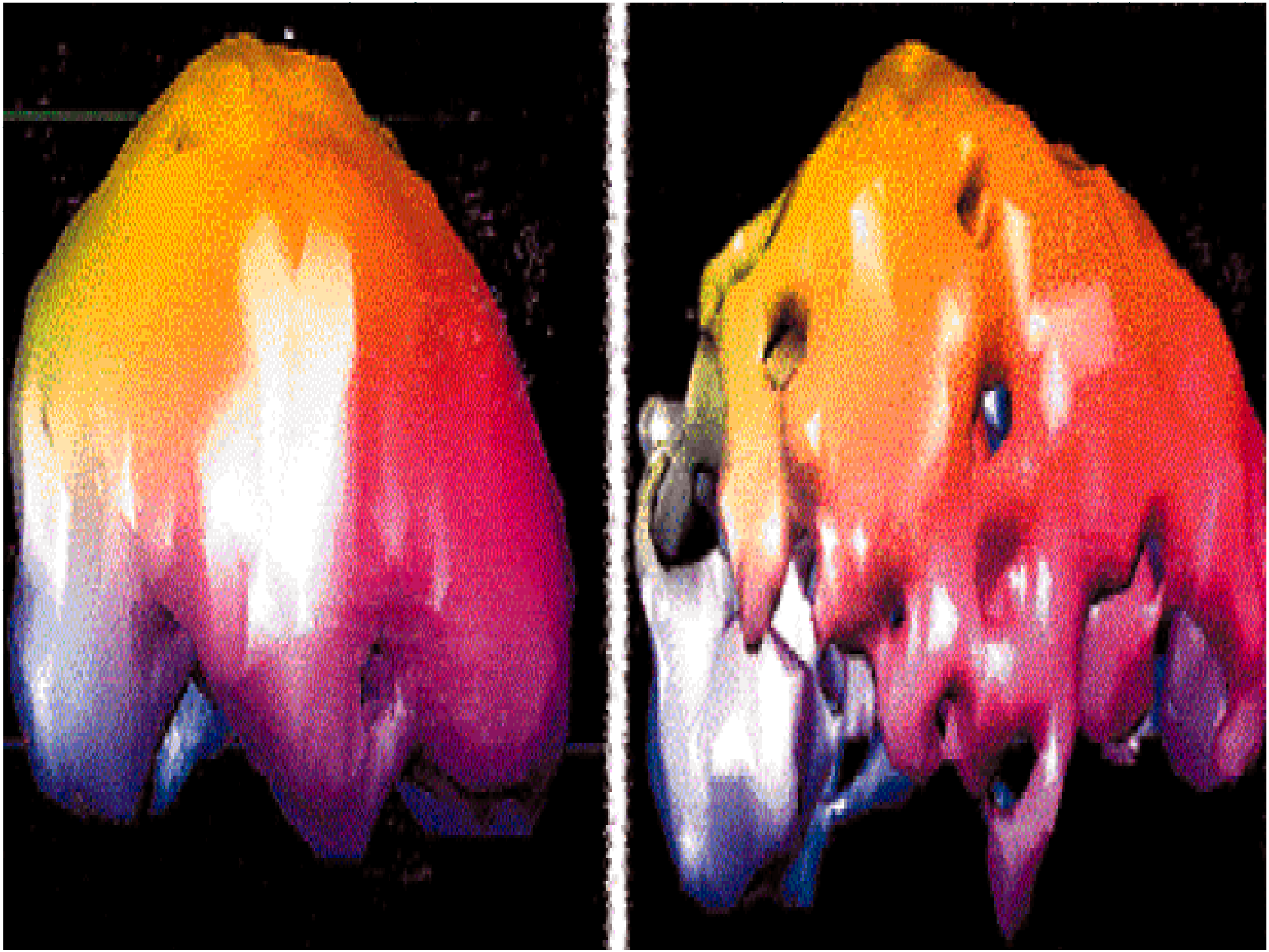
Cycle of Drug Use Related to Pleasure Chemistry



Kinds of Brain Damage caused by Methamphetimine abuse

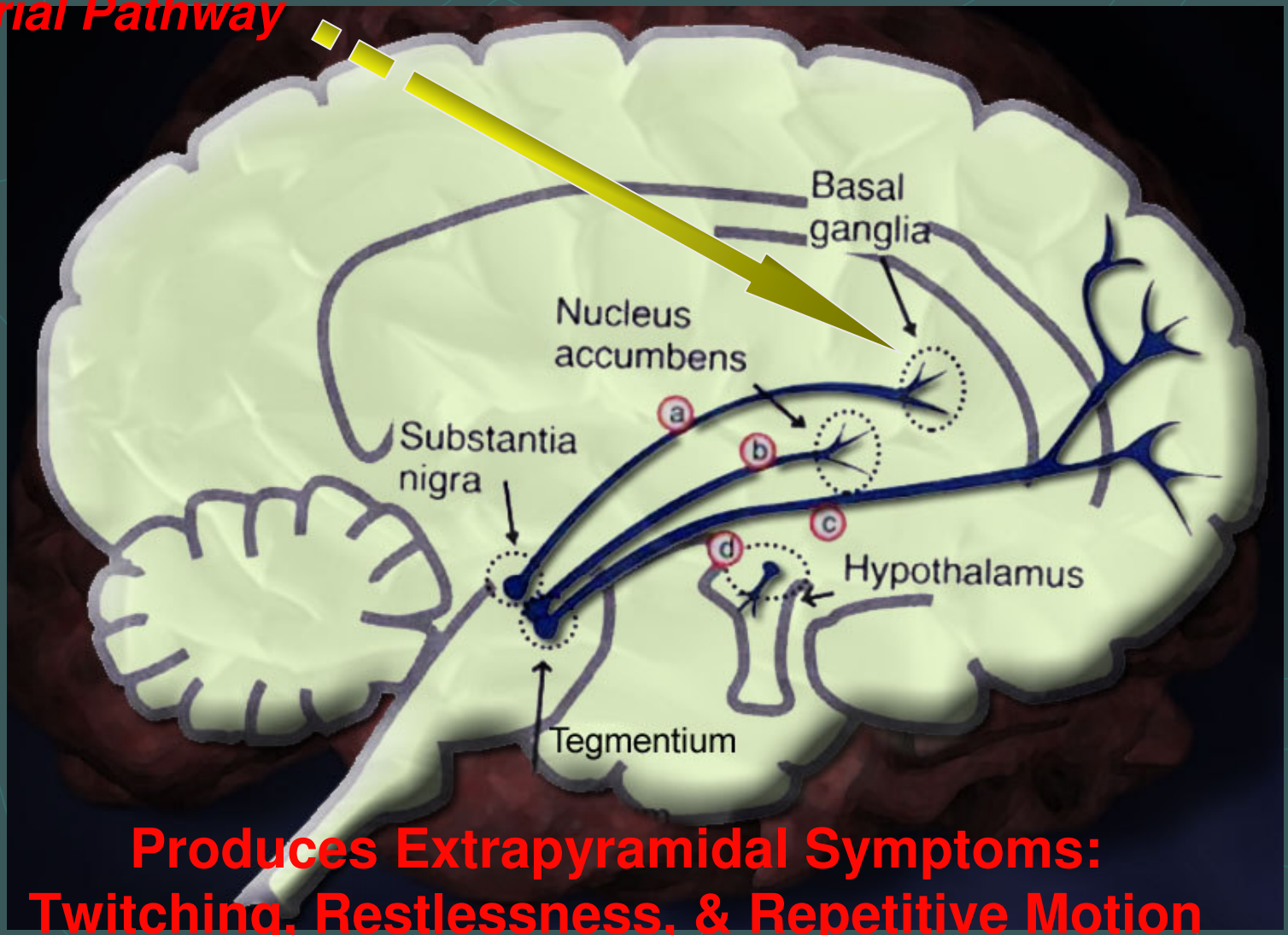
- Gradient Release of dopamine from synaptic vesicles is compromised;
- The re-uptake mechanisms are damaged and wither away;
- Genetic changes cause overpopulation (deformity) of the nerve ending; and,
- Genetic change, through “apoptosis” causes connections to be cut with other neurons.





The Four Dopaminergic Pathways

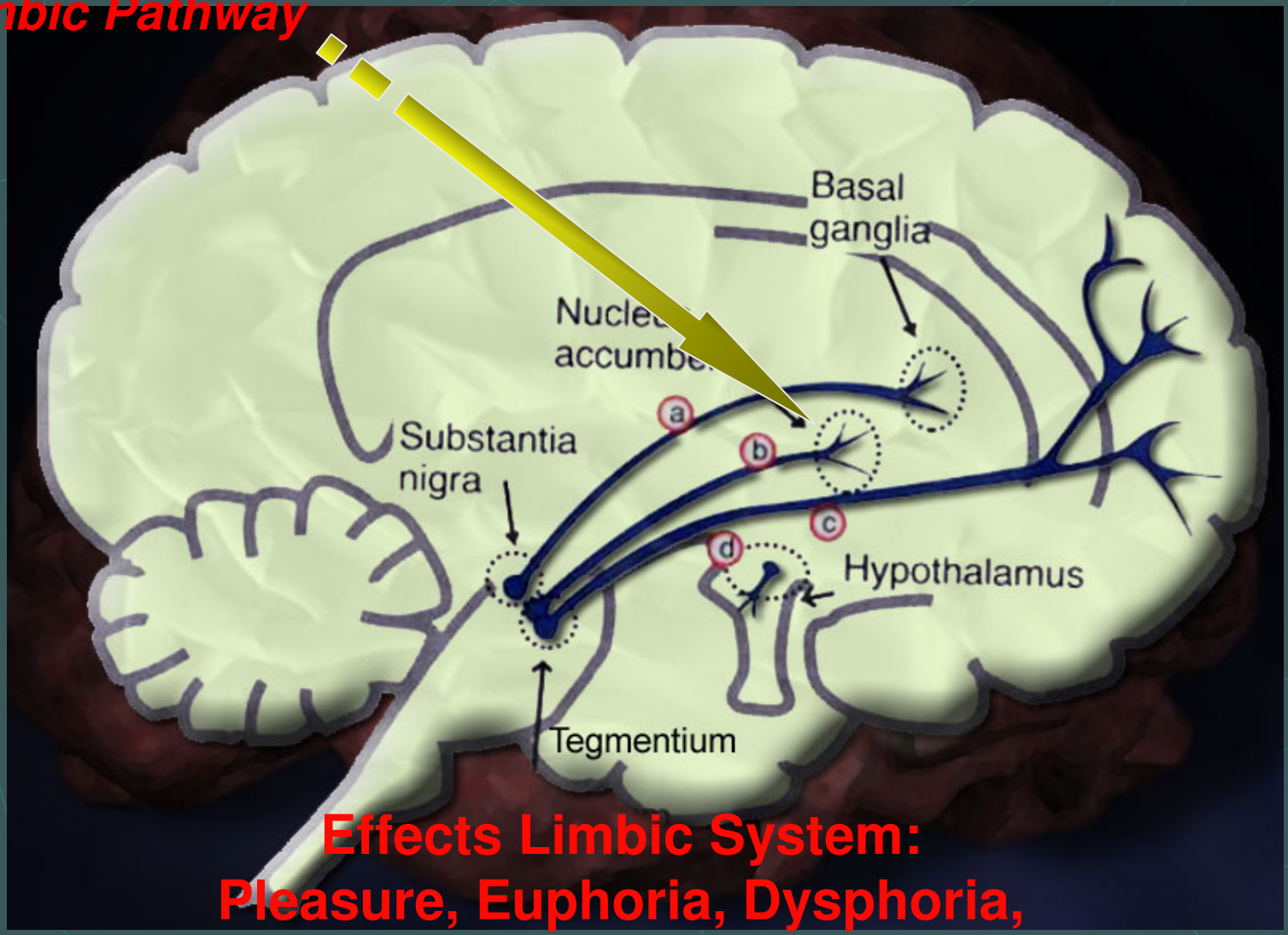
Nigrostrial Pathway



Produces Extrapyramidal Symptoms: Twitching, Restlessness, & Repetitive Motion

The Four Dopaminergic Pathways

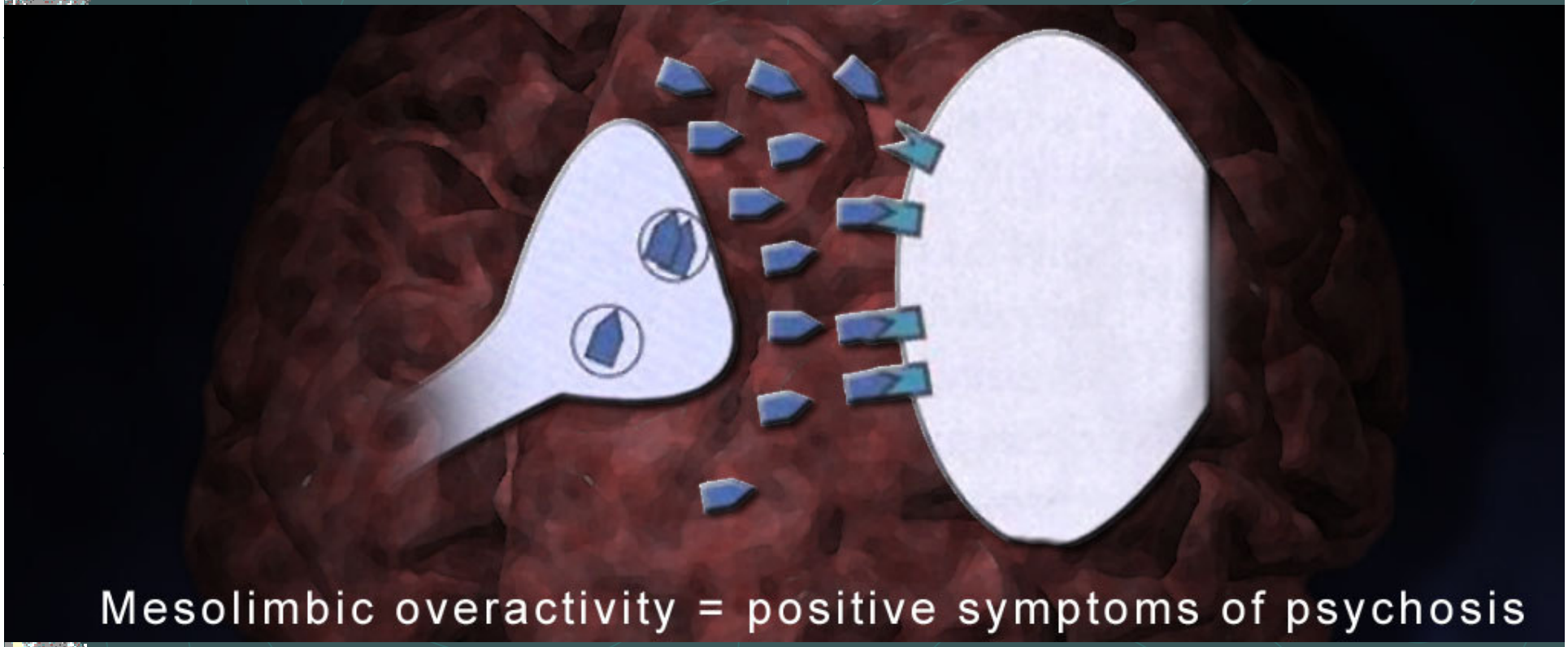
Mesolimbic Pathway



Effects Limbic System:
Pleasure, Euphoria, Dysphoria,
Delusions, Hallucinations, Psychotic Behavior

The Four Dopaminergic Pathways

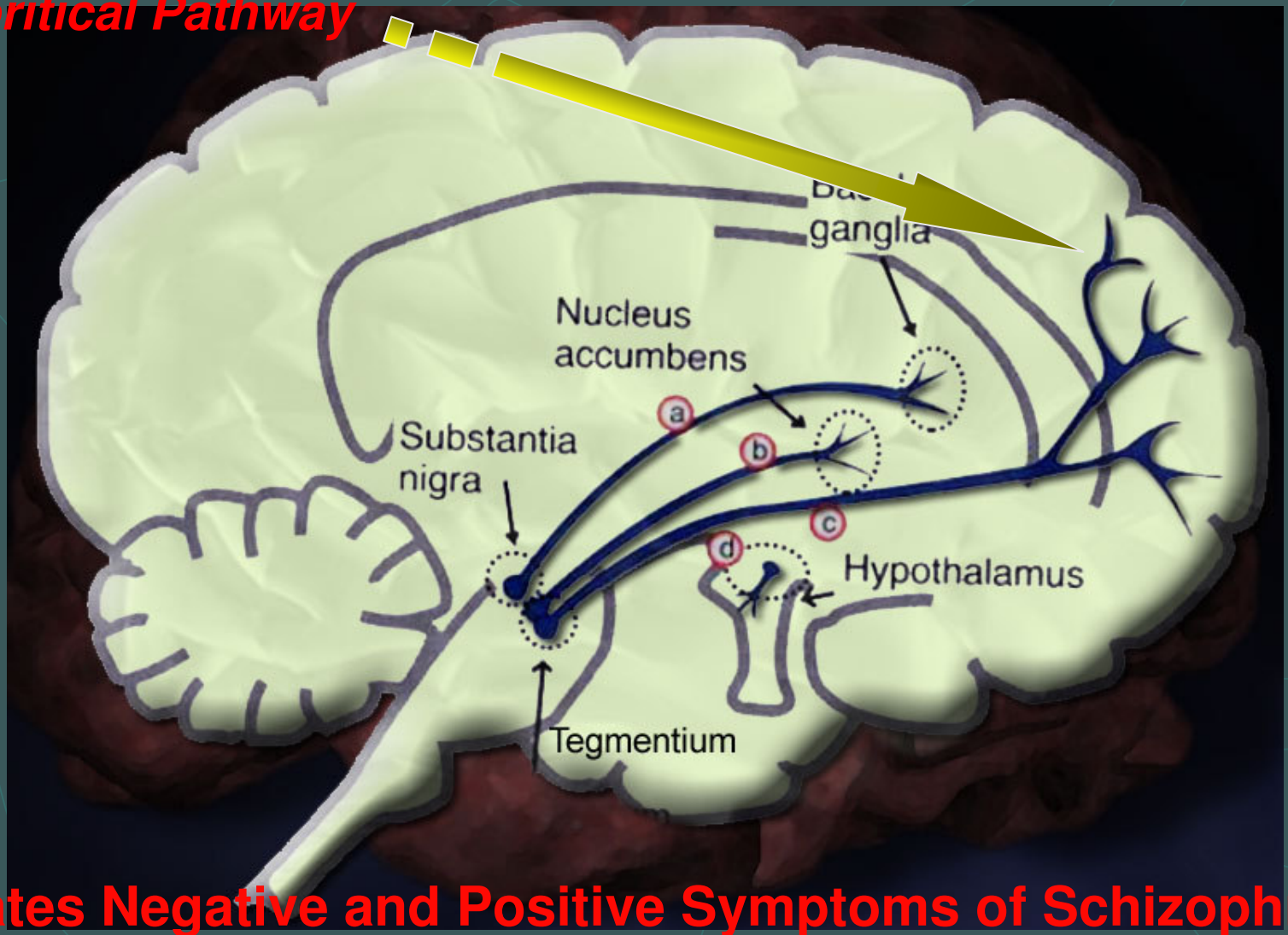
Mesolimbic Pathway



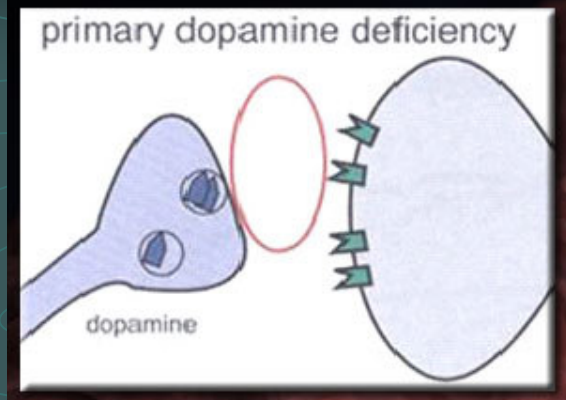
Delusions, Hallucinations, Paranoia, and Violent Behavior

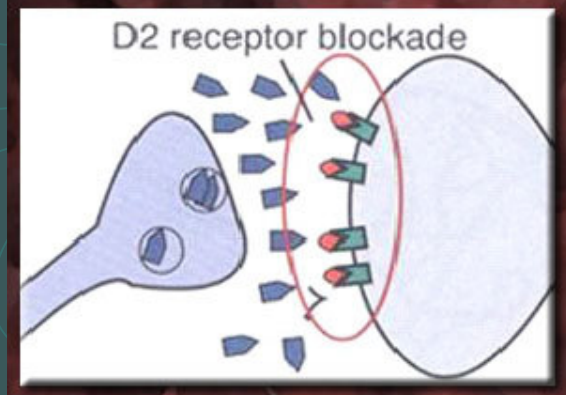
The Four Dopaminergic Pathways

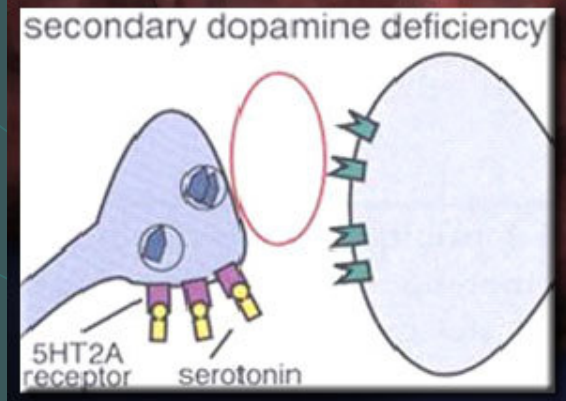
Mesocoritical Pathway



Mediates Negative and Positive Symptoms of Schizophrenia







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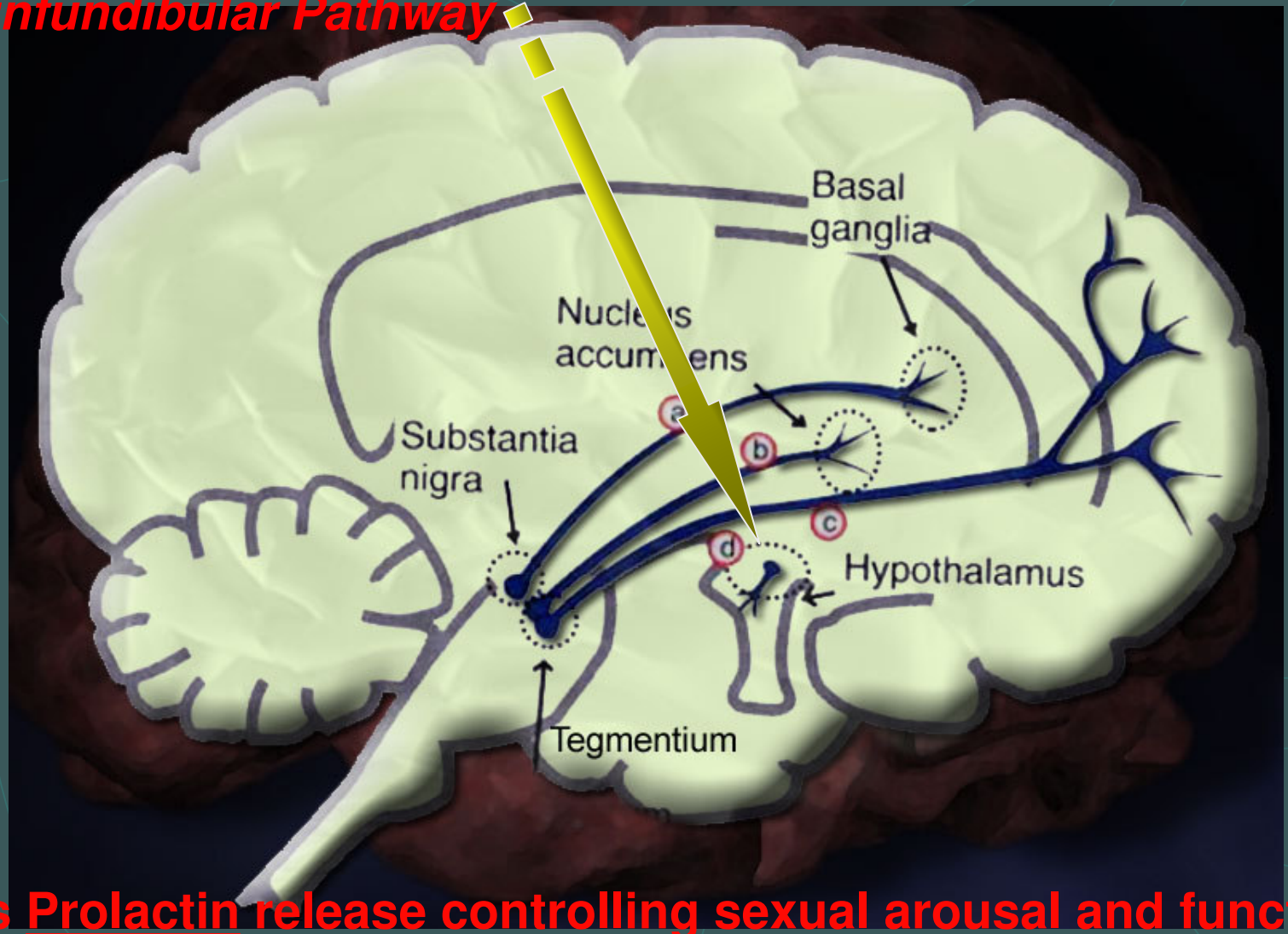
Mesocortical Pathway

Increase in Negative Symptoms

Depression, Fear, Anxiety & Withdrawal From Life

The Four Dopaminergic Pathways

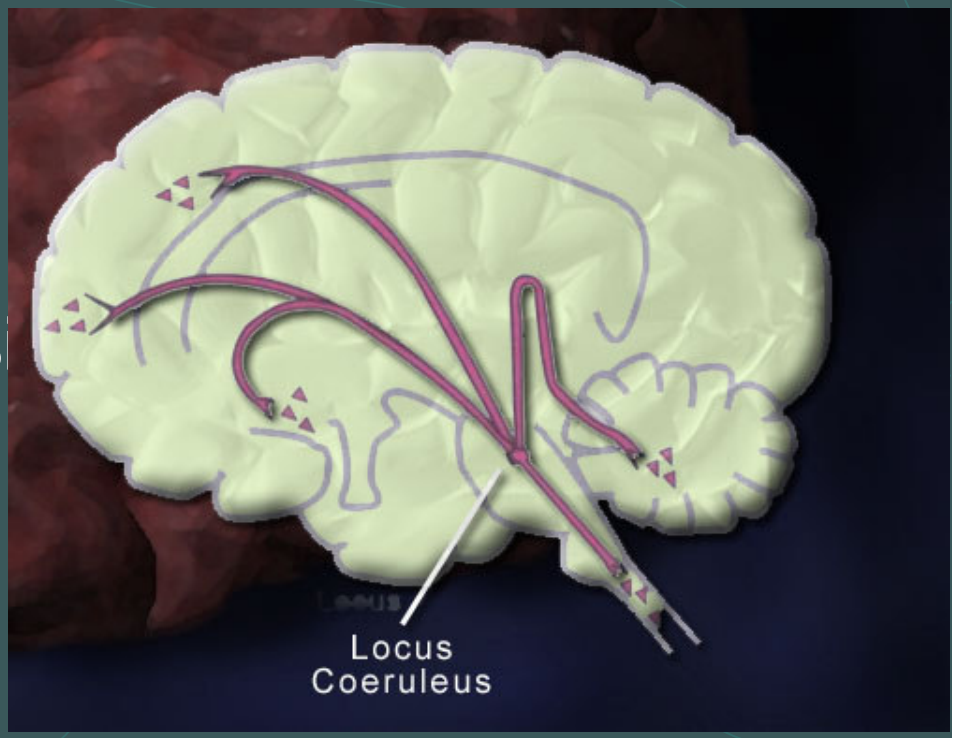
Tuberoinfundibular Pathway



Effects <u>Prolactin</u> release controlling sexual arousal and function.

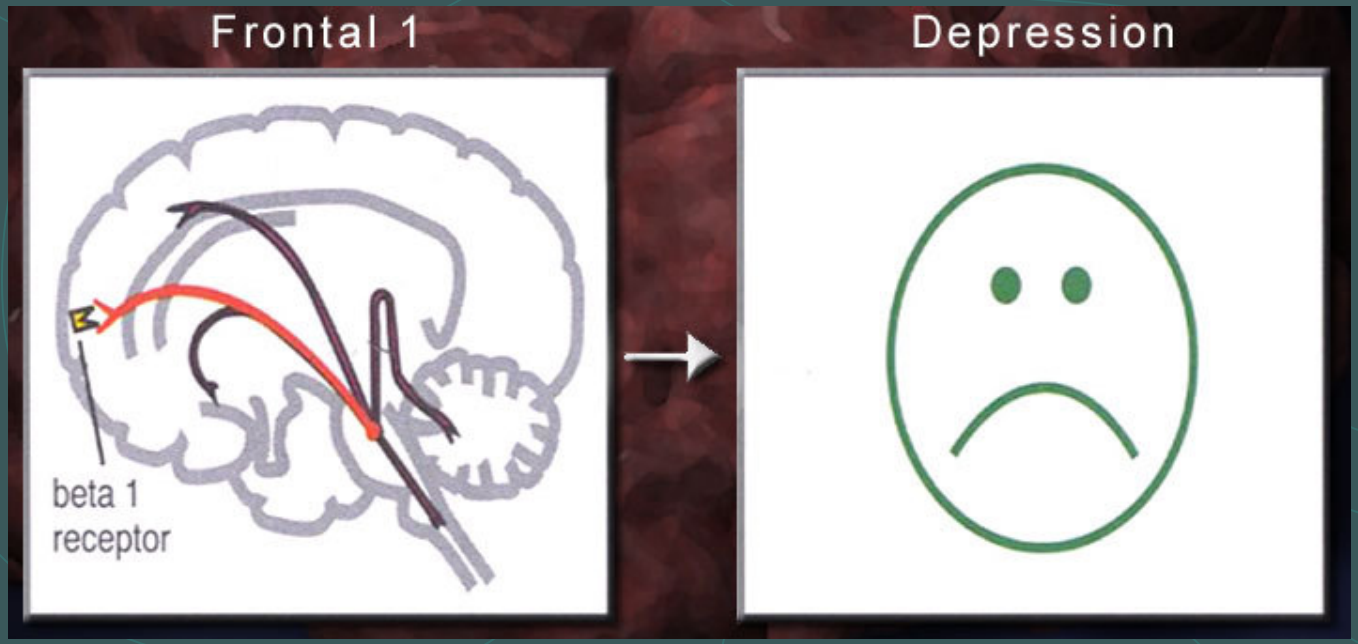
Neurotransmitters – Norepinephrine Pathways

- Related to the following physiological/psychological states:
  - Attention
  - Concentration
  - Working memory
  - Speed of information process
  - Mood
  - Psychomotor activities
  - Mood



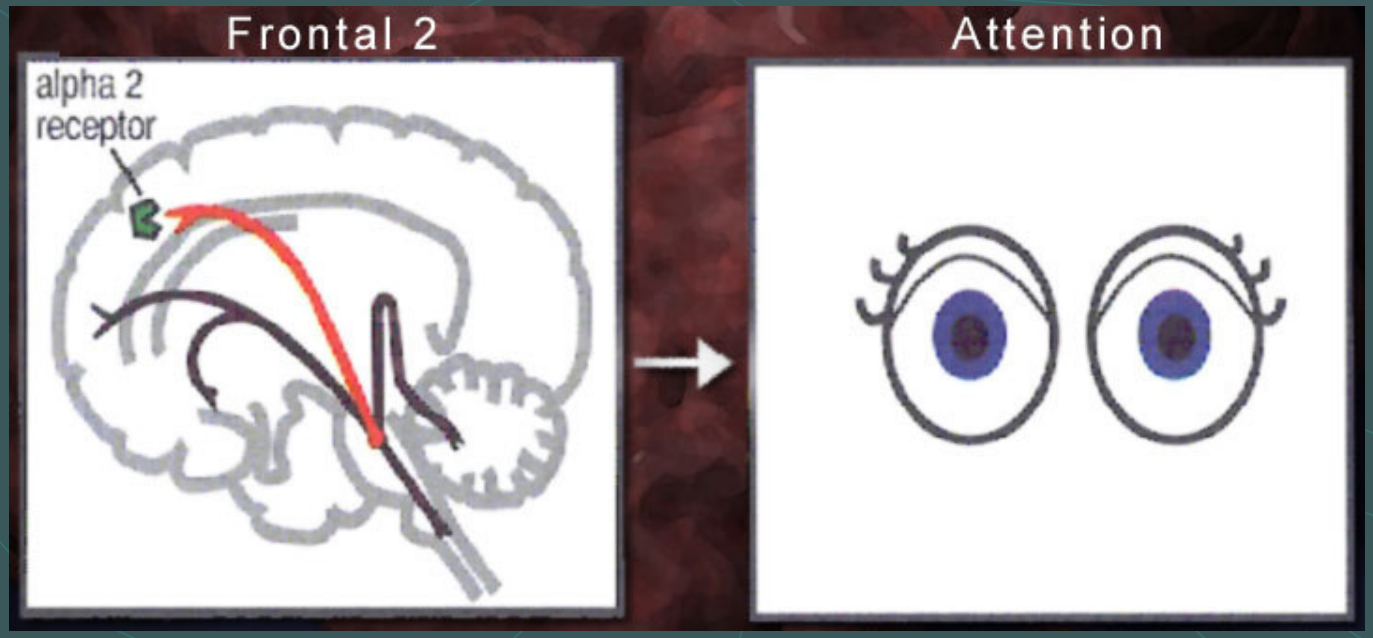
Neurotransmitters – Norepinephrine Pathways

- Depression



Neurotransmitters – Norepinephrine Pathways

- Attention

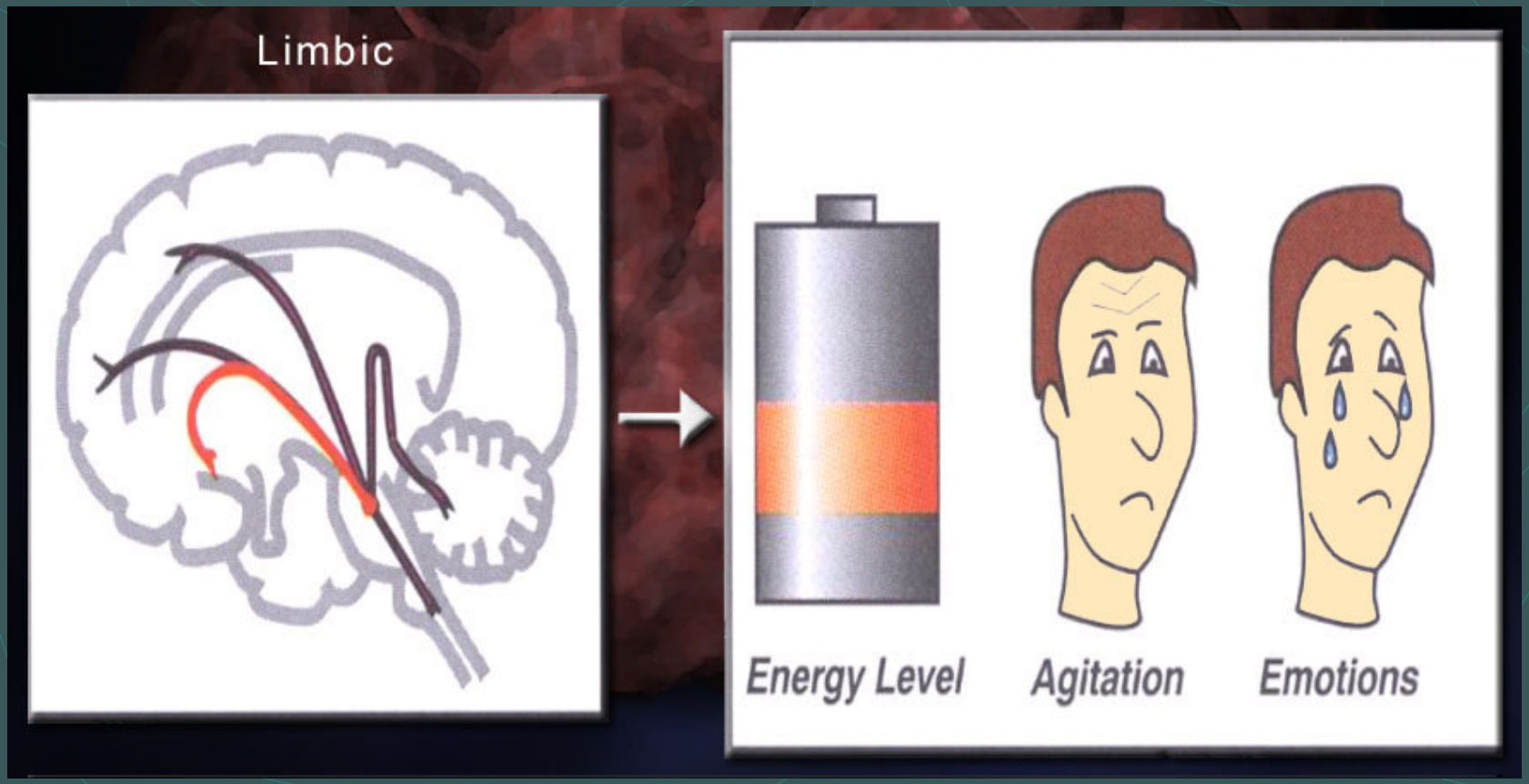


Neurotransmitters – Norepinephreine Pathways

- Pupils 6.5 mm to 7.0 mm in diameter

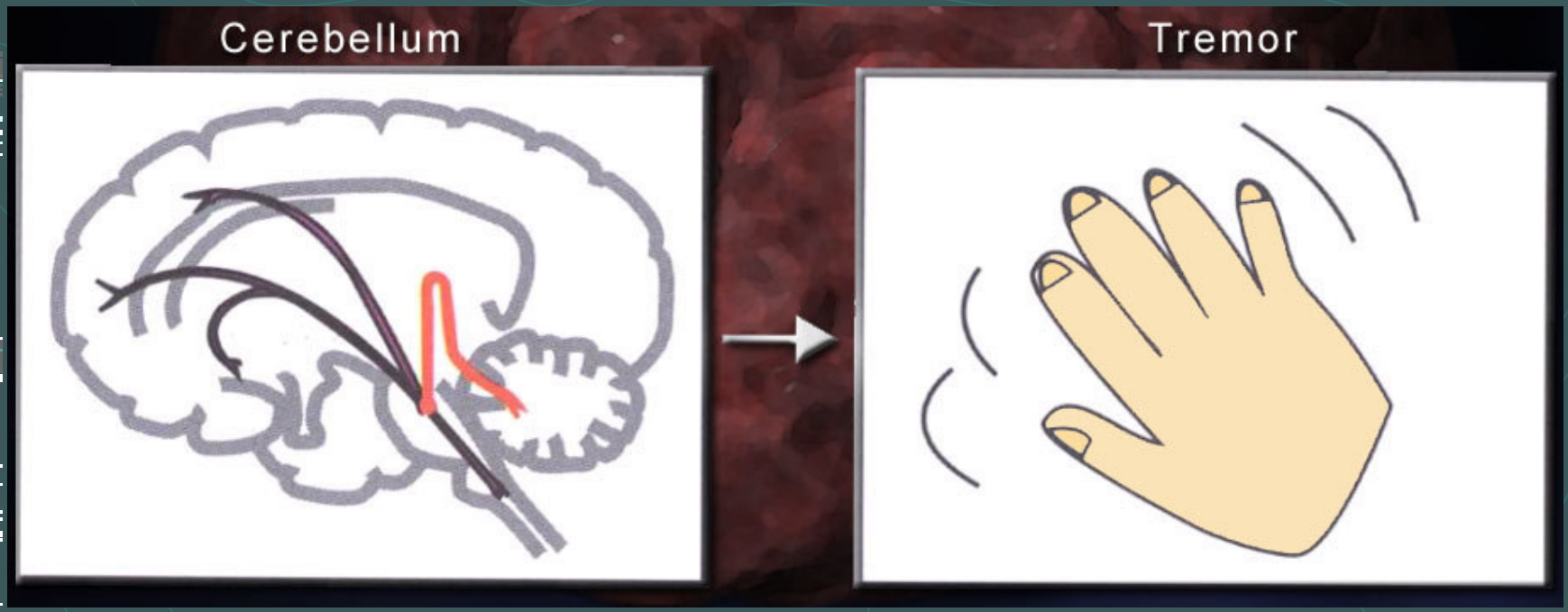
Neurotransmitters – Norepinephrine Pathways

Limbic System



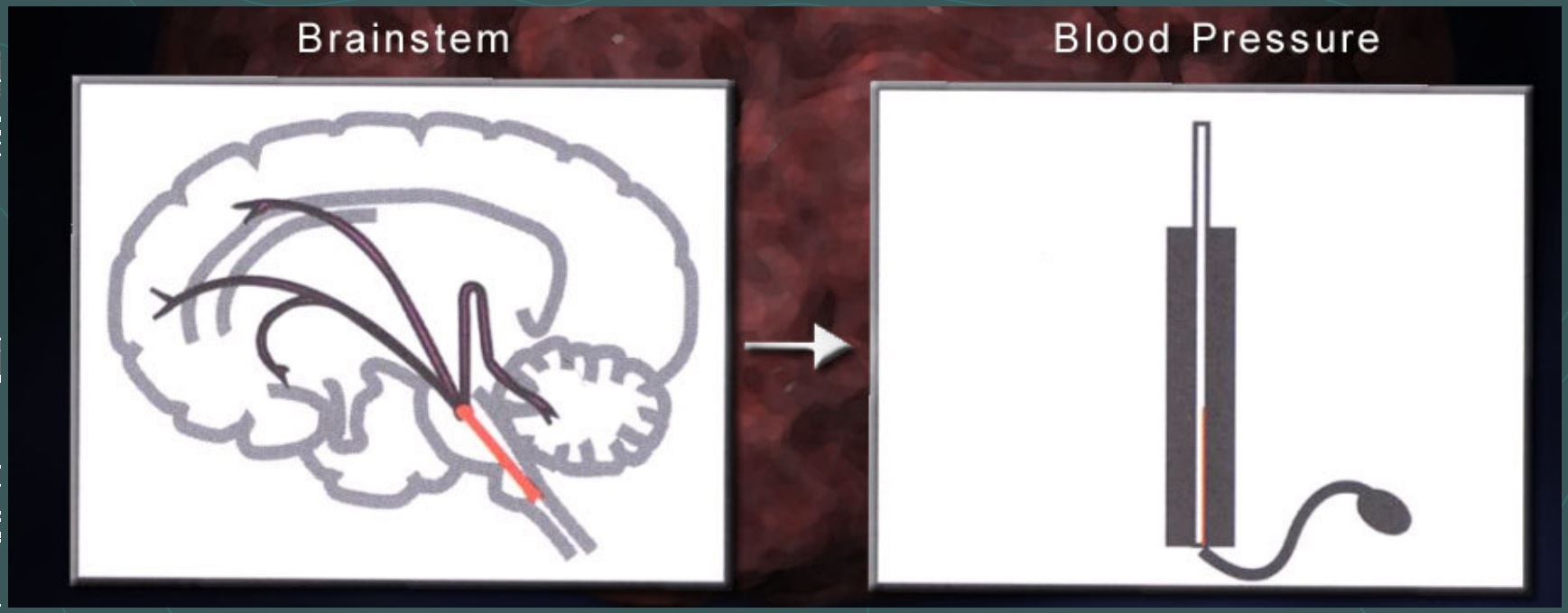
Neurotransmitters – Norepinephrine Pathways

Cerebellum



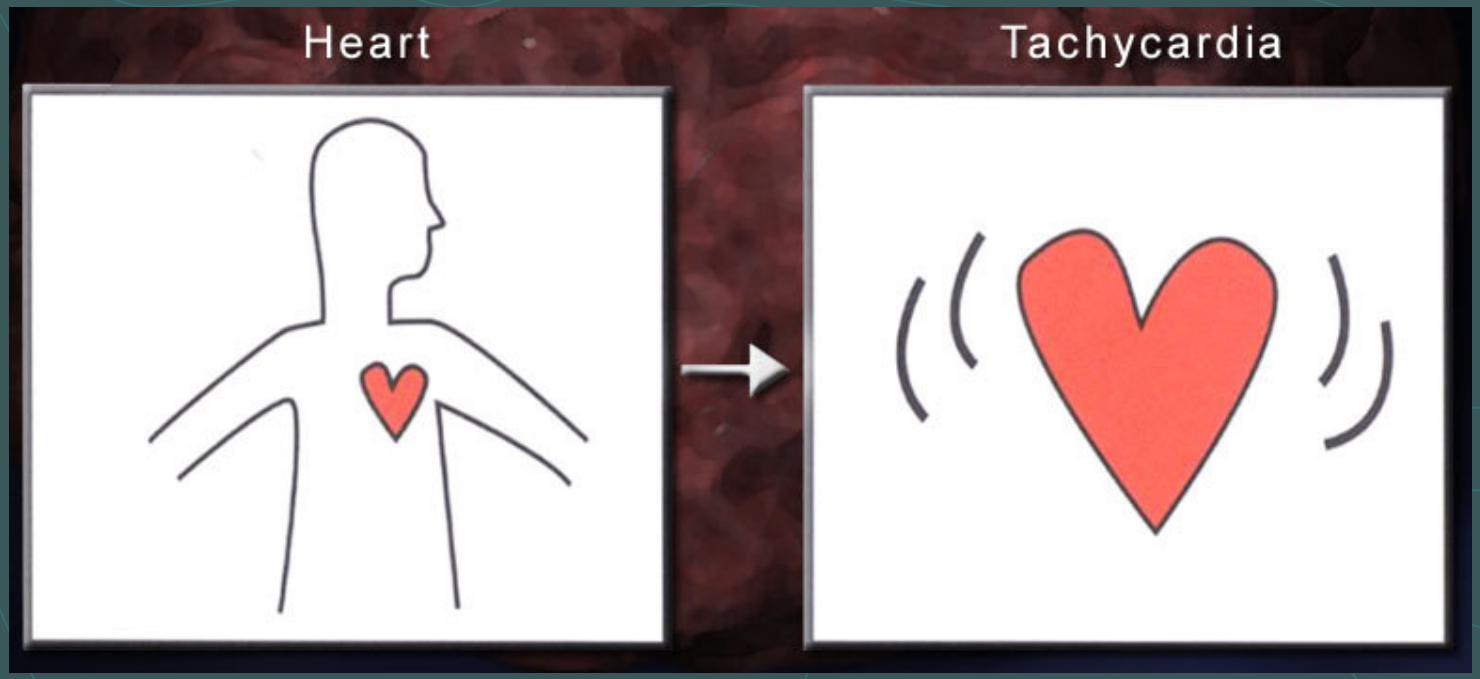
Neurotransmitters – Norepinephrine Pathways

Brain Stem



Neurotransmitters – Norepinephrine Pathways

- Heart

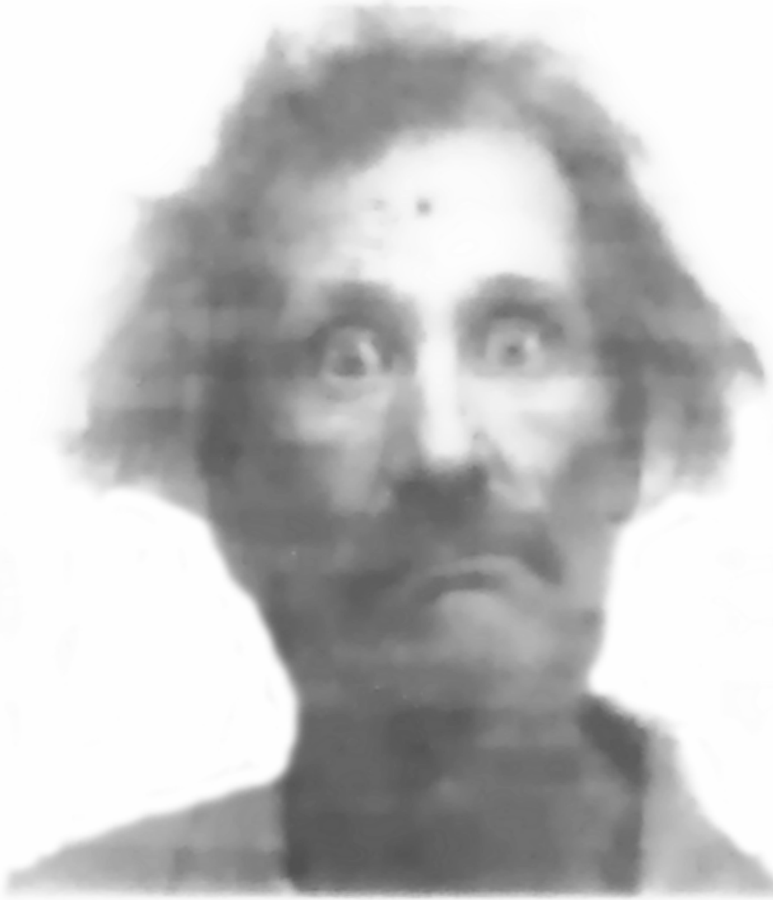


Characteristics of Methamphetamine Psychosis

- Extreme Paranoid Ideation
- Emotional Instability, Panic, extreme fearfulness
- Aggression, high potential for violence
- Well formed delusions
- Insomnia
- Hyperactivity disorder
- Lack of focus

Paranoid-Schizophrenia

- The end product of chronic methamphetamine abuse results in the individual being clinically indistinguishable from a paranoid-schizophrenic.



Nine Years on Meth


'88 6 18 3 1 3 6
HOLLYWOOD POLICE DEPARTMENT

Female With "Crank Bug" Scars

Injection Scars

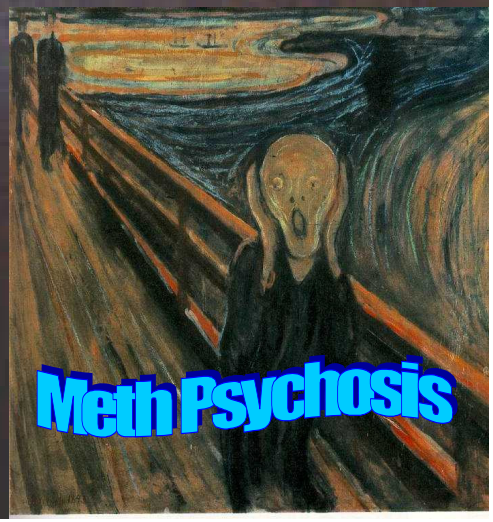
- Make sure your department has a “Sharp” program for needle disposal (OSHA)


A good idea when you are really paranoid!

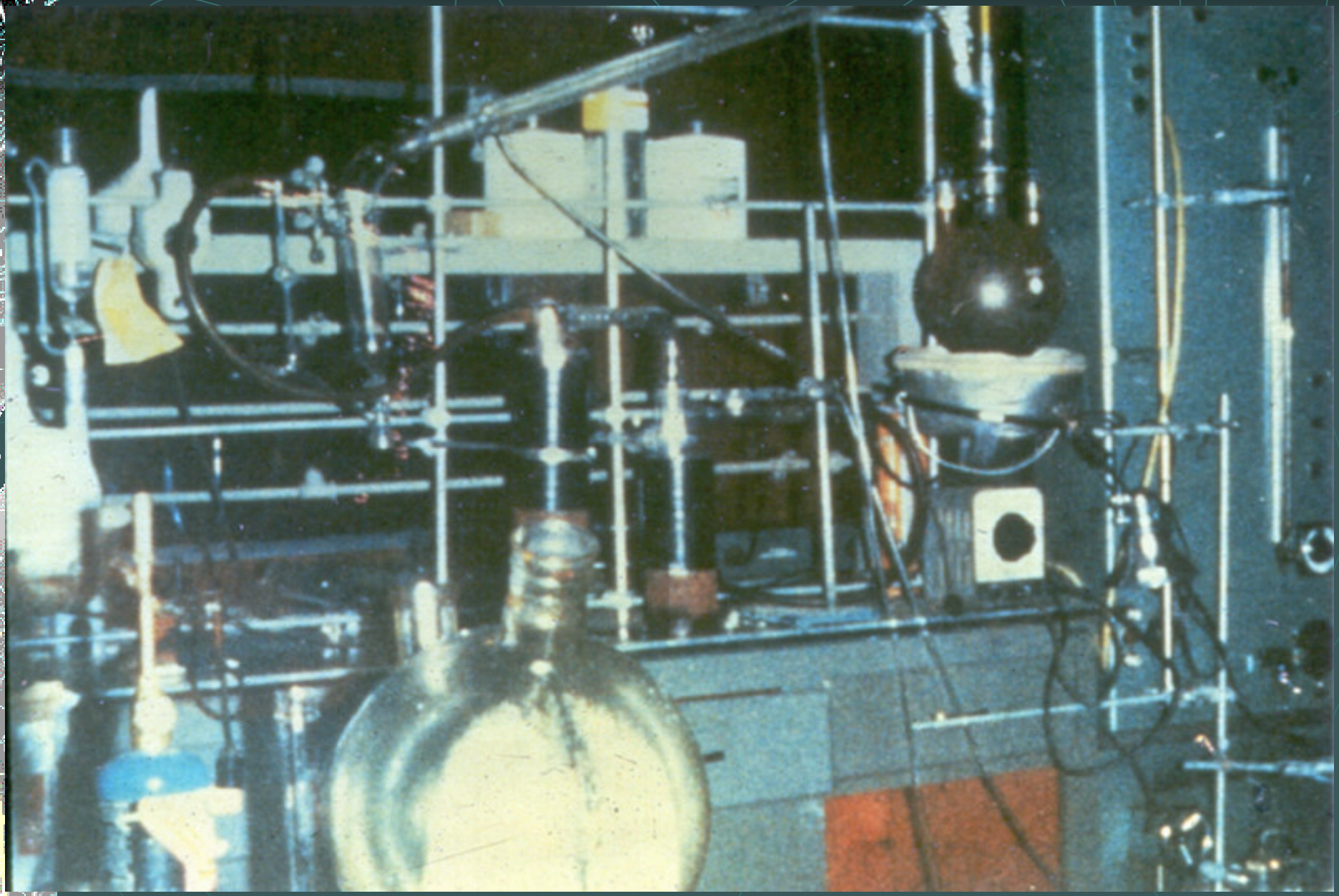
ARMED SUSPECTS

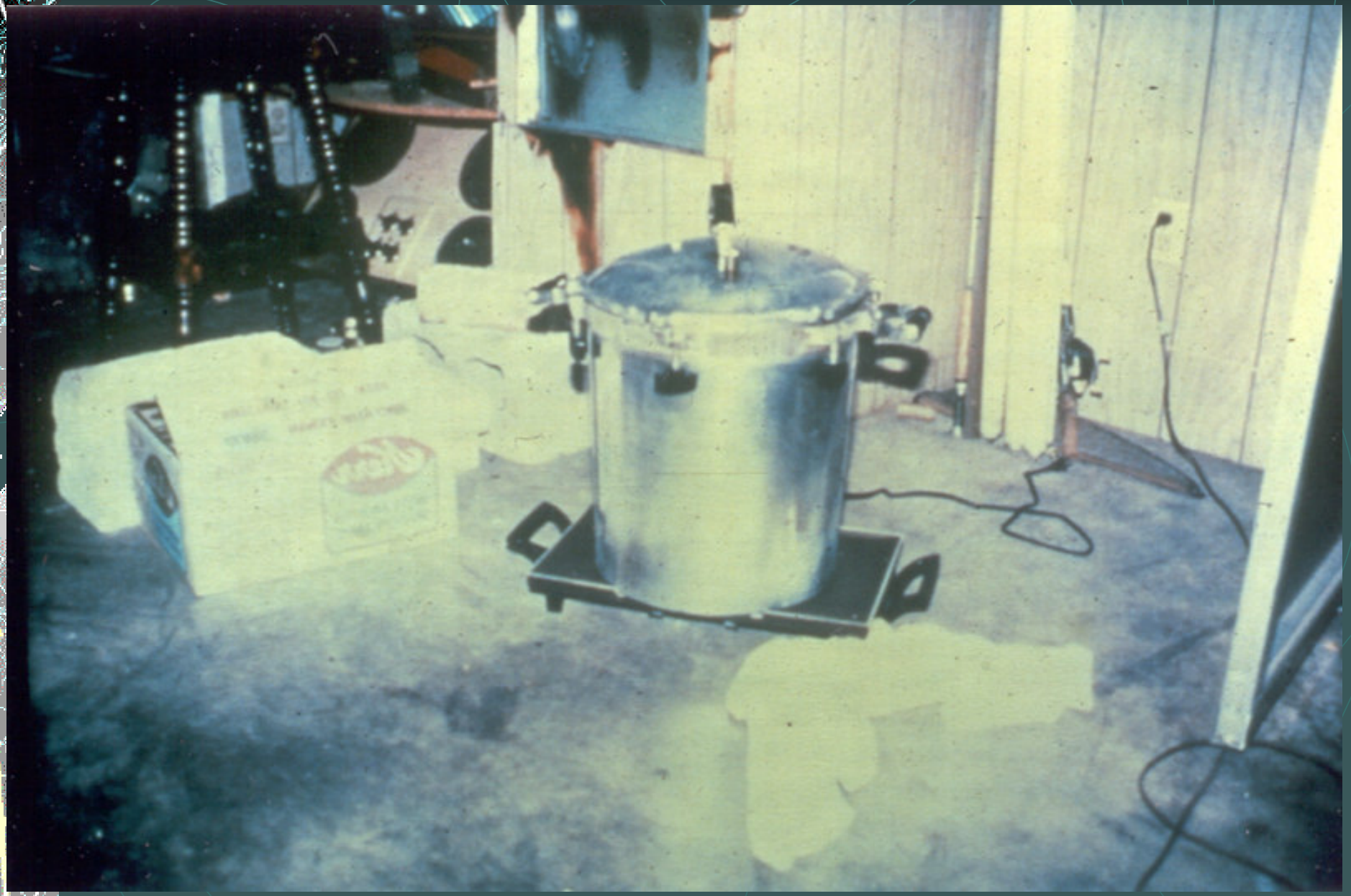
Expect numerous weapons

DEFENSIVE SYSTEMS: examples of paranoid behavior

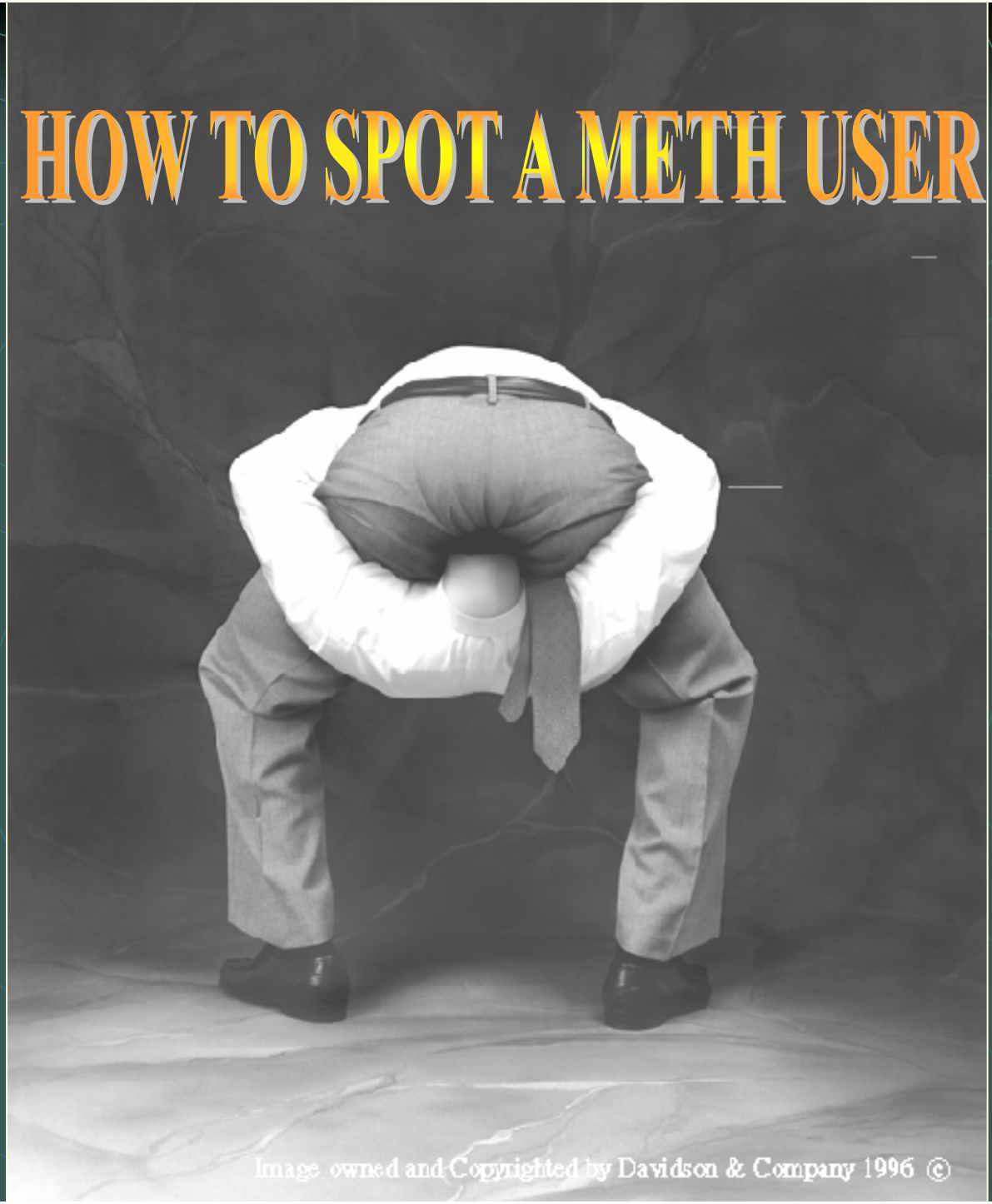



Surveillance Systems





HOW TO SPOT A METH USER

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